

CIAT
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REGISTER

OF

CURRENT RESEARCH ACTIVITIES / EXPERIMENTS

FIRST AND SECOND SEMESTERS: 1978

CIAT
BIBLIOTECA
ADQUISICIONES - CANJE

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SERVICIOS REFERENCIALES Y BIBLIOGRAFICOS

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OVERVIEW SUMMARY

The Register of Current Research Activities is intended to provide an updated listing of experiments and research activities carried out by CIAT scientists both at the headquarters stations and off-site locations. This compilation will be updated each growing season - or at least once a year for long term experiments - and is intended to supplement the more permanent "Profiles of CIAT Research".

The Register includes 51 sectional reports (from separate disciplines within a Program) with a total of 657 different activities/experiments as shown below:

<u>Program</u>	<u>Registers</u>	<u>Activities</u>
BEEF	21	219
BEANS (2 semesters)	12	216
CASSAVA	10	142
ASSOCIATED UNITS	8	80
Total =		657

More detailed summaries are included with each major program's sectional registry. In some cases, as in the Bean Program, where two distinct crops are grown each year, separate registers are prepared for both semesters (A and B).

Allocation of Resources. An attempt was made to estimate allocation of resources and efforts on the different activities based on the information contained in the registers and questionnaires obtained during interviews with about a third of the scientists. Based on subjective estimates, scientists allocated both their sectional resources (scientist input considered to be half the total) as well as their own time spent on major activities to be approximately:

<u>Activity</u>	<u>Sectional (%)</u>	<u>Personal (%)</u>
Research =	77	70
Training =	14	13
Consultation/outreach =	9	17

Considering research alone, the scientists believe their resources and efforts are invested approximately as follows:

<u>Basic Strategy</u>	<u>Input (%)</u>
Identifying and characterizing constraints =	19
Developing research methodology =	12
Direct problem solving activities =	69

It is interesting that the Beef Program, which is 'pioneering new territory' in the poor, acid soils of the tropical Americas, is allocating an estimated one-third of its research efforts on identifying and characterizing the constraints.

Program Coordinators. The leadership role demands a heavy commitment to administration, estimated at about 80 percent of the Program Coordinator's time. Thus, only 14 percent of his own time can be allocated to research with six percent remaining for training activities.

Kind and location of research. Overall, CIAT scientists allocate an estimated three-fourths (74 percent) of their research efforts to field activities and experimentation; with the remainder being done in the laboratory (20 percent) and in greenhouse/growth chambers (6 percent).

Intensive field research is carried out mainly at CIAT managed-stations Palmira, Quilichao and Carimagua. About 200 ha are utilized at the Center headquarters in both major seasons of the year, and perhaps 40 ha each are utilized at Quilichao and Carimagua. Semi-intensive grazing experiments occupy an additional 80 ha at Quilichao and about 260 ha at Carimagua.

Extensive herd management experiments and observations utilize an estimated 9500 ha at Carimagua. In addition, CIAT Beef scientists have 31 ha in experiments and 750 ha in extensive cattle grazing trials at the EMBRAPA Cerrado Center near Brasilia. Beef also has 10 ha of technology validation experiments at 15 sites in Bolivia, Peru, Ecuador, Colombia, Venezuela, Brazil and Nicaragua.

Beans have about 51 ha of off-site experiments principally at Popayán, Pasto, Medellín and Huila; and Cassava has considerable work (about 30 ha) underway at Caicedonia and on the North Coast near Santa Marta (Caribia and Media Luna).

Total area used for field research by CIAT is difficult to estimate on account of overlapping seasons, problems of classification and comparability of use (intensive, semi-intensive and extensive). Perhaps a reasonable approximation is 450 ha of 'intensive' field research, 325 ha of semi-intensive investigations, and 10,200 ha of extensive herd systems studies.

1. BEEF PROGRAM REGISTRY

1978

BEEF TEAM SUMMARY

Initial summary of data from Profiles, Registers and Questionnaires.

Total registers = 21, separate research activities/experiments = 219.

I. Sectional Resources - expressed in percent of total:

A. Major Activities

1. Research	82 %
2. Training	10
3. Consultation/Outreach	8

B. Research Strategies

1. Identification of constraints	32
2. Development of research methodology	8
3. Direct problem solving activities	40

C. Location of Experiments

1. Field	55
2. Laboratory	45
3. Greenhouse/Growth chamber	5

D. Land Used (ha)

	<u>Intensive</u>	<u>Semi-intensive</u>	<u>Extensive</u>
Palmira	4	-	
Quilichao	35	50	
Carimagua	176	176	9500
Brasilia	31		
Other	4		
	250	236	9500

II. Major Constraints

Very important:	Greenhouse Controlled Growth Facilities Equipment
Important:	Assistance

REGISTER OF CURRENT ACTIVITIES

PROGRAM: Impact Area Survey

SECTION: Ganado de Carne

SCIENTISTS: T.T. Cochrane
L.F. Sanchez

REGIONS WITH FIELD STUDIES IN PROGRESS	AREAS IN Ha. (APPROX.)	MAPPING PROGRESS	BIBLIOGRAPHY COMPILATION	DATA BANK COMPILATION	PRELIMINARY SUMMARIES FOR ECONOMIC ANALYSES
Central-west Brazilian "ce rrados"	188,000,000	Final drafting	Advanced	Advanced	In progress
Northern Brazil "savannas"	4,000,000	Photo interpretation	Started	Started	-
Bolivian "savannas"	33,000,000	Photo interpretation	Started	Started	-
Venezuelan "llanos"	16,000,000	Photo interpretation	Started	Started	-
Colombian "llanos"	14,000,000	Photo interpretation	Started	Started	-
Northeast Brazil	20,000,000	Photo interpretation	Started	Started	-
Amazonia (partial)	25,000,000	Photo interpretation	Started	Started	-
T O T A L	300,000,000				

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BeefSECTION: Soils - CoordinatorSCIENTIST: P.A. Sánchez

Number	TITLE: PURPOSE	TREATMENTS	Design/REPS	Re-quire-ments	Date/Duration	Location	REMARKS
PAS 1-77	Nitrogen in grasses (Quilichao) comparing fertilizer N rates with legume N	Gr: B.D., P.m., A.g. N(kg/ha/yr): 0-50-100-200-400 Urea and SCU in B.d. Leg: Cp, Sg 136, Sg 184	RCB 3	0.3 ha	June 23/77 4 yr	Q Suelos	Going well
PAS	Nitrogen fertilization in <u>Brachiaria decumbens</u> - Carimagua: Compare the effect of N source, rate and timing on B.d. growth in paddocks of 3 different ages	Paddocks: 1, 2, 3 yrs old. N rate 0-50-100-200-400. N sources: Urea, SCU 4 legumes. N timing: 1/6, 1/3	RCB 3	0.6 ha	July 4/77 4 yr	C utilization	Going well OP gave
PAS 3-77	Phosphorus management of grass-legume pastures in Quilichao: Compare sources and rates on initial and residual effect of P on a long term basis	Sources: SF3, 3 rocks. P ₂ O ₅ rates: 0-50-100-200-400-800-1600. Gr: P.m. + A.g. 1 leg: C.p.	RCB 3	1.0 ha	Sept. 23/77 10 yr	Q Suelos	Going well My contr to P proj
PAS 4-77	Systems of pasture establishment through crops - Carimagua: Compare 3 cropping sequences and P rates as ways to establish 3 g/l pasture.	Systems: (3) P rates: 8 Gr: P.m., A.g., B.d Leg: D. ovalifolium	RCB per system 3	1.0 ha	July 8/77 10 yr	C Reserva	Yuca failed because of bacteriosis
PAS 5-77	Systems of pasture establishment through crops - Quilichao: Determine best crop-pasture combination and time of seeding interactions at 2 fertility levels	Systems: 5, yuca, corn, sorghum, rice, beans, pastures First levels: "high", low. Timing: 2-4 per system. Gr: P.m., A.g., Leg: S.g.	RCB per system	1.0 ha	Oct. 11/77 2 yr.	Q Suelos	Going well
PAS 6-77	Screening for tolerance to Al toxicity and low P at Carimagua: Observe cultivar differences and make initial steps towards methodology	Cultivars: 5 forages Al satn %: P ₂ O ₅ /ha:	RCB 4	3.0 ha	Aug. 1977 5 yr	C Reserva	Ph.D. the research of Guido gadillo

REGISTER OF CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beef

SECTION: Soils-Coordinator

SCIENTIST: P.A. Sánchez

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REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: B F E F

SECTION: Soils - Phosphorus Project

WILLIAM E. FE
SCIENTIST: LUIS ALFREDO

num- er	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMA
PFC 1/75	Effectiveness of PRs on a Carimagua Oxisol as measured by Cassava response, and soil P levels.	7 P carriers 4 P levels: 0-50-100-400 kg P ₂ O ₅ /ha	SP, 3 rep	3872 M ²	10-20- 75 66	C Tabaquera	
PFC 2/76	Effectiveness of PRs on a Carimagua Oxisol as measured by <u>Brachiaria decumbens</u> response, and soil P levels.	7 P carriers 4 P levels: 25-50-100-400 kg P ₂ O ₅ /ha	RCB 3 rep	3496 M ²	5-25- 76 72	C Agronomía	
PFC 3/78	Initial and residual effects of varying levels of P as 20% acidulated Huila PR, granulated and ungranulated, with 3 cropping systems on a Carimagua Oxisol	3 P carriers 4 P levels: 0-50-100-200 kg P ₂ O ₅ /ha, granulated vs ungranulated.	SP, 3 rep	3000 M ²	5-78 60	C La Reserva	
PFC 4/78	Effect of levels of acidulation, rates of P, and granulation of two PRs on rice, peanuts, and Guinea Grass grown on sequence on a Carimagua Oxisol.	6 P carriers 2 P levels: 100-200 kg P ₂ O ₅ /ha, granulation, 3 crops	RCB, 3 rep	2500 M ²	5-78 60	C La Reserva	

REGISTER OF CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: B E E F

SECTION: Soils - Phosphorus Project

WILLIAM E. FENSTERMAKER
SCIENTIST: LUIS ALFREDO LEON

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REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM B E E F

SECTION: Soils - Phosphorus Project

SCIENTIST: WILLIAM E. FR
LUIS ALFREDO

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Duration	Loca- tion	REMARKS
PFQ 1/78	Management of Phosphorus in establishing and maintaining forage species, grown on a Quilichao Ultisol	4 Base treatments: 0-100-200-400 kg P ₂ O ₅ /ha as PR	SP, 3 rep	9810 M ²	5-78 60	Q El Yucal	
		4 meth.application 3 rates & annual.					
PFQ 2/78	Effect of varying rates of TSP and 3 PRs (Huila, Pesca, Sardinata) alone and in combination, on yield of rice and peanuts, grown on a Quilichao Ultisol.	4 P carriers, 3 P levels: 50-100-200 kg P ₂ O ₅ /ha	Lat. 5X5, 4 rep	2809 M ²	5-78 60	Q El Yucal	
PFQ 3/78	Effect of varying ratio of TSP and each PR (Pesca, Huila, Sardinata) on yield of Guinea Grass on a Quilichao Ultisol	4 P carriers, 2 P levels: 100-200 kg P ₂ O ₅ /ha	RCB 3 rep	2295 M ²	5-78 60	Q R1 Yucal	
PFQ 4/78	Effect of P rates and carriers on yield of Cassava, grown on a Quilichao Ultisol.	3 P carriers, 3 P levels: 100-200-300 kg P ₂ O ₅ /ha	Lat. 4 X 4 4 rep.	2216 M ²	5-78 48	Q Sinai.	

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PROGRAM: BEEF PRODUCTION

SECTION: SOIL MICROBIOLOGY

SCIENTIST: JAKE HALLIDAY

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Requirements	Date/ Duration	Location *	REMARKS
JH-1.	Test of Llanos soil for native rhizobia effective on <u>S.capitata</u>					G	Completed
JH-2.	Rhizobium selection for <u>Desmodium distortum</u> (Stage II)					G	Completed
JH-3.	Rhizobium selection for <u>Centrosema</u> hybrid (Stage II)					G	Completed
JH-4.	Check of commercial strains on <u>Desmodium distortum</u> and <u>Centrosema</u> hybrid					G	Completed
JH-5.	Effectiveness of CIAT 79 on <u>Stylosanthes humilis</u> No.1041					G	Pending
JH-6.	Test of Llanos soil for native rhizobia effective on <u>Stylosanthes capitata</u> (JH-1 was inconclusive)					G	Completed
JH-7.	Vegetative propagules of <u>Stylosanthes capitata</u> for strain testing					G	Pending
JH-8.	Suitability of Andrew's medium for <u>Desmodium</u> and <u>Centrosema</u>					G	Completed

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

3.

PROGRAM: BEEF PRODUCTION

SECTION: SOIL MICROBIOLOGY

SCIENTIST: JAKE HALLIDAY

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion *	REMARKS
JH-19.	Field trial of <u>Rhizobium</u> strains and technologies for inoculating <u>Desmodium ovalifolium</u> No.350.		RCB 3			Q	In progress
JH-20.	<u>Rhizobium</u> selection for <u>Desmodium heterophyllum</u> (Stage I)					G	Completed
JH-21.	<u>Rhizobium</u> selection for <u>Desmodium heterophyllum</u> (Stage II)					G	Completed
JH-22.	Development of antisera for inoculant strains					L	In progress
JH-23.	Field trial of <u>Rhizobium</u> strains and technologies for inoculation of <u>Desmodium distortum</u> No.335		RCB 3			Q	In progress
JH-24.	Field trial of <u>Rhizobium</u> strains and technologies for inoculation of <u>Macroptilium</u> sp. No.535		RCB 3			Q	In progress
JH-25.	Field demonstration of the benefits of inoculation of <u>Desmodium heterophyllum</u>		RCB 3			Q	In progress
JH-26.	Three plot field inoculation trial of <u>Pueraria phaseoloides</u>		RCB 1			Q	In progress
JH-27.	Three plot field inoculation trial of <u>Desmodium heterophyllum</u>		RCB 1			Q	In progress

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

4.

PROGRAM: BEEF PRODUCTION

SECTION: SOIL MICROBIOLOGY

SCIENTIST: JAKE HALLIDAY

Num- ber	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion *	REMARKS
JH-28.	Three plot field inoculation trial of <u>Stylosanthes capitata</u> No.1078		RCB 1			Q	In progress
JH-29.	Three plot field inoculation trial of <u>Stylosanthes capitata</u> No.1019		RCB 1			Q	In progress
JH-30.	Three plot field inoculation trial of <u>Macroptilium</u> sp. No.535		RCB 1			Q	In progress
JH-31.	Three plot field inoculation trial of <u>Stylosanthes guianensis</u> No.136		RCB 1			Q	In progress
JH-32.	<u>Rhizobium</u> selection for <u>Macroptilium</u> sp. (Stage II)		RCB 5			G	In progress
JH-33.	<u>Rhizobium</u> selection for <u>Desmodium distortum</u> No.335. (Stage III)		RCB 5			S	In progress
H-34.	<u>Rhizobium</u> selection for <u>Centrosema</u> hybrid No.1733 (Stage III)		RCB 5			S	In progress
H-35.	RAD/JH project. <u>Rhizobium</u> growth and nodulation in acid environments					LGQC	In progress
H-36.	<u>Rhizobium</u> selection for <u>Desmodium heterophyllum</u> No.349 (Stage III)		RCB 5			G	In progress

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

5.

PROGRAM: BEEF PRODUCTION

SECTION: SOIL MICROBIOLOGY

SCIENTIST: JAKE HALLIDAY

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Requirements	Date/ Duration	Location*	REMARK
JH-37	CB81 and NGR8 as inoculants for <u>Leucaena</u> in acid soil		RCB 10			G	In progress
JH-38	Characterization of black nodule strain for <u>Desmodium</u>		RCB 5			G	In progress
JH-39	Survival of <u>Rhizobium</u> strain CIAT 71 on pelleted seed					L	In progress
JH-40	Survival of <u>Rhizobium</u> strains CIAT 71 and CIAT 61 in Rionegro peat					LG	In progress
JH-41	Coal compared to peat as a carrier of <u>Rhizobium</u>					LG	Completed
JH-42	Survival of <u>Rhizobium</u> during dilution with saline solution as opposed to distilled water					L	In progress
JH-43	Effect of type of dessicant on rate of drying of nodules					L	In progress
JH-44	Effect of species and size of nodule on rate of dessication					L	Pending
JH-45	Effect of inoculum size on nodulation in an acid soil					Q	Pending

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

6.

PROGRAM: BEEF PRODUCTION

SECTION: SOIL MICROBIOLOGY

SCIENTIST: JAKE HALLIDAY

Num- ber	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion*	REMAR
JH-46.	Field trial of <u>Rhizobium</u> strains and technologies for inoculating <u>Zornia</u> sp. No.728		RCB 3			C	Pending
JH-47.	Field trial of <u>Rhizobium</u> strains and technologies for inoculating <u>Stylosanthes capitata</u> No.1315		RCB 3			C	Pending
JH-48.	Influence of chemical form and method of application of molybdenum on nitrogen fixation by <u>Macroptilium</u> sp.					C	Pending
JH-49.	Selection of strains of <u>Rhizobium</u> for <u>Leucaena</u> in the field		RCB 1			C	Pending
JH-50.	Selection of strains of <u>Rhizobium</u> for <u>Leucaena</u> in the field		RCB 1			Q	Pending
JH-51.	<u>Rhizobium</u> selection for <u>Stylosanthes capitata</u> (Stage I)		RCB 5			G	Pending
JH-52.	<u>Rhizobium</u> selection for <u>Stylosanthes capitata</u> (Stage II)		RCB 5			G	Pending
JH-53.	<u>Rhizobium</u> selection for <u>ornia</u> sp. (Stage I)		RCB 5			G	Pending
	<u>Rhizobium</u> selection for <u>Zornia</u> sp.		RCB				

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

7.

PROGRAM: BEEF PRODUCTION

SECTION: SOIL MICROBIOLOGY

SCIENTIST: JAKE HALLIDAY

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion*	REMARKS
JH-55	<u>Rhizobium</u> selection for <u>Zornia</u> sp. (Stage III)		RCB 5			S	Pending
JH-56	<u>Rhizobium</u> selection for <u>Desmodium</u> <u>ovalifolium</u> (Stage I)		RCB 5			G	Pending
JH-57	<u>Rhizobium</u> selection for <u>Desmodium</u> <u>ovalifolium</u> (Stage II)		RCB 5			G	Pending
JH-58	<u>Rhizobium</u> selection for <u>Desmodium</u> <u>ovalifolium</u> (Stage III)		RCB 5			S	Pending
	* L= Laboratory G= growth room S= Screenhouse Q= Quilichao C= Carimagua B= Brasilia						

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beef Plant Introduction

SECTION: Genetic Resources Unit

SCIENTIST: Dr. Rainer Schultze-K

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REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

1.2.2

Bela Grof Y

PROGRAM: Beef Production

SECTION: Legume Agronomy

SCIENTIST: Nobuyoshi Mas

Num- ber	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REM.
Q1-78	Evaluation of <u>Macroptilium</u>	10	RCB 4 rep.	0.1 ha	Apr. 1978	Q	
C1-78	Preliminary evaluation of new legume accessions	450	RCB 4 rep.	2 ha	Apr. 1978	C	
C2-78	Evaluation of promising legumes under grazing conditions (cooperation with Pasture Utilization Section).	6	RCB 2 rep.	24 ha	Apr. 1978	C	
AL/SJ- 1-77	Ensayo de variedades de <u>Stylosanthes</u> en asociación con <u>Andropogon gayanus</u> .	10	RCB 4 rep.	1100 m ²	June 23/77	Q	
AL/SJ- 2-77	Evaluación de variedades de <u>Centrosema</u>	6	RCB 4 rep.	1380 m ²	June 24/77	Q	
AL/SJ- 3-77	Ensayo de <u>Desmodium leonii</u> 3001 y <u>Desmodium</u> sp. 3019	8	RCB 4 rep.	920 m ²	June 28/77	Q	
AL/SJ- 4-77	Tasa de crecimiento relativa de 3 leguminosas en asociación con <u>Andropogon gayanus</u>	12	RCB 4 rep.	690 m ²	Sept. 21/77	Q	
AL/SJ- 5-77	Ensayo de <u>Desmodium</u> s. con pasto Guinea y <u>Brachiaria</u>	12	RCB 3 rep.	1920 m ²	Jul. 11/77	Q	
AL/SJ- 6/77	Ensayo de 4 especies de <u>Desmodium</u> en asociación con 4 especies de gramíneas	16	RCB 3 rep.	1280 m ²	Jul. 29/78	Q	

PROGRAM: Beef ProductionSECTION: Legume AgronomySCIENTIST: Nobuyoshi Maen

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
AL/SJ- 7-77	Evaluación de especies de leguminosas promisorias	12	RCB 3 rep.	960 m ²	Oct. 11/77	Q	
AL/SJ- 8-77	Tasa de crecimiento relativo de la mezcla <u>Desmodium ovalifolium</u> y <u>Andropogon gayanus</u> .	12	RCB 4 rep.	1380 m ²	Oct. 13/77	Q	
AL/SJ- 9-77	Evaluación de 4 leguminosas con <u>Andropogon gayanus</u> y <u>Panicum maximum</u>	8	RCB 4 rep.	920 m ²	Oct. 31/77	Q	
AL/SJ- 10-77	Rendimiento de materia seca de 3 leguminosas con <u>Andropogon gayanus</u> 621 y <u>Panicum maximum</u> 622.	6	RCB 4 rep.	690 m ²	Oct. 29/77	Q	
AL/SJ- 11-77	Tasa de crecimiento de <u>Centrosema</u> híbrido en asociación con <u>Andropogon gayanus</u> 621 y <u>Panicum maximum</u> 622.	12	RCB 4 rep.	1380 m ²	Nov. 11/77	Q	
AL/SJ- 12-77	Tasa de crecimiento de <u>Zornia</u> sp. CIAT 728 en asociación con <u>Andropogon gayanus</u> 621 y <u>Panicum maximum</u> 622.	8	RCB 4 rep.	920 m ²	Nov. 12/77	Q	
AL/SJ- 13-77	Tasa de crecimiento de dos ecotipos de <u>Stylosanthes guianensis</u> en asociación con <u>Andropogon gayanus</u> 621.	8	RCB 4 rep.	920 m ²	Nov. 15/77	Q	
AL/SJ- 14-77	Compatibilidad de gramíneas/leguminosas.	8	RCB 4 rep.	920 m ²	Nov. 14/77	Q	
AL/SJ- 15-77	Compatibilidad de gramíneas/leguminosas.	8	RCB 4 rep.	920 m ²	Dic. 7/77	Q	

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

Bela Grof y

PROGRAM: Beef ProductionSECTION: Legume AgronomySCIENTIST: Nobuyoshi Maeno

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Requirements	Date/ Duration	Location	REMARKS
-1-77	Evaluación de introducciones promisorias bajo condiciones estandarizadas	20	RCB 4 rep.		Feb. 16/78	P	Invernadero
-2-77	Evaluación de introducciones promisorias bajo condiciones estandarizadas	24	RCB 4 rep.		Feb. 17/78	P	Invernadero
-3-77	Evaluación de introducciones promisorias bajo condiciones estandarizadas	20	RCB 4 rep.		Feb. 1/78	P	Invernadero
-4-77	Evaluación de introducciones promisorias bajo condiciones estandarizadas	24	RCB 4 rep.		Feb. 1/78	P	Invernadero
-7	Evaluación Pasto negro y Pasto Venezuela en asociación con leguminosas	8	RCB 3 rep.	1200 m ²	Marzo 25/76	Limónar	
-8	Evaluación de <u>Brachiaria</u> , <u>Cynodon</u> 631 (estrella), <u>Digitaria</u> 651 en asociación con <u>Desmodium ovalifolium</u> y <u>Centrosema</u> 1733.	3	RCB 8 rep.	1200 m ²	Marzo 77	Limónar	
-15	Ensayo preliminar con 4 pastos y 2 leguminosas bajo pastoreo	8	RCB 5 rep.	1 ha	Abr. 30/76	Limónar	
-16	Ensayo preliminar con un pasto y cinco leguminosas bajo pastoreo	5	RCB 4 rep.	1 ha	Abr. 30/76	Limónar	
-17	Ensayo preliminar con 4 pastos y una mezcla de leguminosas	4	RCB 5 rep.	1 ha	Mayo 7/76	Limónar	
-1-77	Evaluación preliminar de leguminosas promisorias bajo pastoreo	60	RCB	6 ha	Jun- 77	C	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beef Production

SECTION: Legume Agronomy

SCIENTIST: Derrick Thomas

Number	TITLE: PURPOSE	TREATMENTS	Design/REPS	Re-quire-ments	Date/Dura-tion	Loca-tion	REMARKS
1.	Biological evaluation of promising legume accessions from CIAT and CPAC (Stage I).	500 accessions as spaced plants	RCB 2 rep	2 ha area	Oct. 1978 3 yrs.	CPAC Brasi-lia	In time, new accessions added whilst poor forming types will be discarded.
2.	Productivity and persistence of promising legumes grown with <u>Brachiaria decumbens</u> and <u>Andropogon gayanus</u> under grazing. (Stage II)	10 legume treatments (CIAT and CPAC) x 2 grasses	RCB 3 rep	3 ha area. 60 cattle	Oct. 1978 4 yrs	CPAC Brasi-lia	New promising accessions from Stage I will be evaluated in future.
3.	Adaptation of <u>Leucaena</u> species to acid infertile soils of Cerrado (preliminary observation)	2 <u>Leucaena</u> varieties x 4 inoculation treatments x 2 sites	RCB 3 rep	2 x 1/2 ha area	Oct. 1978 3 yrs	CPAC Brasi-lia	Future work include evaluation of new lines (Hutton) and management.
4.	Potential for seed production of promising accessions from CIAT collection.	25 grass and legume species from CIAT collection	un-repli-cated	1/2ha area	Oct. 1978 3 yrs.	CPAC Brasi-lia	Continuation of experiment established 1970 J.E.F.

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEEF PRODUCTIONSECTION: GRASS AGRONOMYSCIENTIST: C.A. JONES

m-	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
J-1	Determine the effects of management factors on forage growth and quality: species (20), Nitrogen levels (4), Phosphorus levels (4), burning (2) and clipping (2).	Cvs = 17 grasses and 3 legumes N(4) = 0, 100, 200, 400 P ₂ O ₅ (4) = 0, 50, 100, 200. Fire = with and without clipping = 5 and 10 cm.	SP, 2	0.9 ha	36	C	The experiment will be used to determine growth response curves to N, P and drought stress (other factors being optimum).
J-2	Same as above	same as above except P ₂ O ₅ (4) = 0, 100, 200, 400.	SP, 2	0.9 ha	36	Q	same as above
J-3	Selection of populations of <u>Andropogon gavanus</u> for: wide leaves, narrow leaves, erect leaves, decumbent leaves, early flowering and late flowering.	does not apply.	none	0.6 ha	24	C	5 crown splits from each plant populations maintained for purposes of selection.
J-4	Evaluation of relative drought tolerance in 17 grasses and 3 legumes.	2 sites: "alto" and "bajo".	5 within each site	0.2 ha	24	Q	Growth of plants in the "alto" to be compared to those on the "bajo" site during the dry season.

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEEF PRODUCTION

SECTION: GRASS AGRONOMY

SCIENTIST: C.A. JONES

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARK
CAJ-5	Determine the minimum phosphorus level at which competition for phosphorus in an association of <u>Andropogon gavanus</u> and <u>Stylosanthes guianensis</u> becomes insignificant.	$P_2O_5(4) = 0, 100, 200$ 400. Spacing(2) = alternate rows vs. 4-row blocks	SP, 5	0, 2 ha	24	Q	Effect of competition detected by differences growth between plants in rows and in blocks
CAJ-6	Determine the maximum leaf area index of <u>Andropogon gavanus</u> at which the growth of <u>Stylosanthes guianensis</u> is unaffected.	Spacing(4) = 1, 2, 4, and 8 contiguous rows of each species	SP, 5	0, 2 ha	24	Q	The grass in each plot be clipped to prevent competition for light
CAJ-7	Determine the effects of fertility and flooding on the growth of 8 grass species	Cvs = 8 $P_2O_5, K_2O(6) = 0, 0;$ 50, 50; 150, 0; 150, 50; 150, 100; 450, 50.	SP, 6	3 ha	36	C	A gradient of soil saturation exists across 6 reps.

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beef Production

SECTION: Pasture Development

SCIENTIST: James M. Spain

Num- ber	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
JMS-1- 78	Spatial distribution of legumes and grasses in association (soil-forming grasses)	Varying strip width of components	System- atic 4 reps	2 ha Animals	May 78 3-4 years	C	ICA Field Staff
JMS-2- 78	Control of native savanna with herbicides for pasture establishment	4 herbicides at 4 rates applied 1,2 and 4 months after burning	C.Fact SP/SP 3 reps	2000 m ²	April 78 15 mos	C	ICA Field Staff
JMS-3- 78	Effect of tillage system on runoff and soil loss on sloping sites	Six tillage treatments ranging from zero to conventional	C.Fact 3 reps	2 ha	? 78	C	In Cooperation with ICA (Hugo Restrepo)
JMS-4- 78	Date of seeding of legumes relative to grasses in association with different planting systems	3 systems of planting 5 dates of planting 4 associations	C.Fact SP/SP 3 reps	0.5 ha	May 78 1 year	C	ICA Field Staff
JMS-5- 78	Interaction of species (associations) and fertility (P); productivity and persistence under grazing	4 associations 3 P levels Rotational grazing	C.Fact SP 2 reps	2 ha	May 78 3-4 years	C	ICA Field Staff
JMS-6- 78	The effect of date of seeding and tillage systems on pasture establishment	Planting 8 species each month April-November with conventional and stubble mulch tillage.	C.Fact SP/SP 3 reps	0.7 ha	April 78 18 mos	C	Subjected to approval
JMS-7- 78	Low density seeding (B) in wet and flooded sites	4 grass species, 2 legumes, 6 P levels range of drainage conditions	System- atic 2 reps	2.8 ha	April 78 18 mos	C	Extension of low density Expt. CP-1-77
JMS-8- 78	Low density seeding (C) effect of tillage of inter-plant area	4 grass species associated with legumes 4 tillage systems	C.Fact CP 3 reps	0.8 ha	18 mos	C	Extension of low density Expt. CP-01-77
DP-1- 77	Low density seeding of grasses and legumes (A) in savanna	10 species, 16 fertility treatments, planted 1000 hills/ha	C.Fact SP 2 reps	3 ha	Aug. 77 15 mos	C	ICA Field Staff
DP-2- 77	Fertilizer maintenance requirements of grasses under grazing	4 species 3 x 3 LxK factorial with & W.O. N	Fact SP/SP 2 reps	800 m ² / species	1976 indef.	C	Cooperative with Pasture utiliz.
DP-3- 77	The effect of maintenance fertilizer, rest period and associated grass on ndzu-grass associations productivity, persistence	3 rest periods, 3 maintenance treatments. 3 grasses, seeded in strips	C.Fact SP/SP 2 reps	MOB Grazing 4 ha	1976 3 years	C	Cooperative with Pasture utiliz.
DP-1-2- 3-4-5- 6-7-8- 77	Experiments to be terminated or turned over to José Salinas	Fertility requirements Acid soil tolerance					

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

8 May 1978

PROGRAM: Beef Production Program SECTION: Seed Production

SCIENTIST: John E. Ferguson

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Requirements	Date/ Duration	Location	REMARKS
JEF-77-1	Seed Increase of Promising Legume Accessions	Numerous, promising legume accessions	--	More than 10 ha	From June 1977	Q	Continuing activity bi accession a area change
JEF 77-2	Seed Increase of Promising Grass Accessions	Numerous, promising grass accessions	-	each loc. More than 3 ha	From June 1977	P (en B1 Y T3) Q	Continuing activity, bi accession a area change
JEF 77-3	Seed Production Potencial in the Cerrado	Selected range of legume and grasses	10 x 10 un-repl.	land 1.0 ha	Nov77 Jul78	Brasilia	Collabor with CPAC
JEF 77-4	Post harvest management of <u>Andropogon gayanus</u>	a) Stacking v none b) Rapid v slow dry c) Mech v hand thres.	RCB 2 reps	Seed qual. lab.	Nov77 Nov79	Q and P	
JEF 78-1	Methods of harvesting of <u>Andropogon gayanus</u>	a) Direct combining b) Manual c) Manual and mech.	RCB 2 rps.	Seed qual. lab.	Jan78 Jan80	Q	
JEF 78-9	Basic Seed Production of <u>Stylosanthes capitata</u>	<u>Stylosanthes capitata</u> CIAT 1019 CIAT 1300 CIAT 1078		5 ha	June78 Jan80	C	
JEF-78 7	Herbicides for forage legumes	4 species 3 products	RCB 2 reps.	0.1 ha	Apr78 Jun78	P (G2)	
JEF 78-8	Herbicides for forage grasses	3 grasses 4 products	RCB 2 reps.	0.1 ha	Apr78 Jun78	P (G2)	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beef Production

SECTION: Pasture Utilization

SCIENTIST: Oswaldo Paladin

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
P-73.01C	Animal productivity of <u>B. decumbens</u> . Fixed stocking	S.R.: 0.9-1.3-1.7 steers/ha	CR 1	12.5 ha	VII-73 72 Months	C	
P-74.01C	Animal productivity of <u>B. decumbens</u> . Low stocking in dry season and variable in wet season.	Dry: 0.7-0.7-0.7 Wet: 1.6-2.3-3.0 steers/ha	CR 1	12.5 ha	VII-74 72 Months	C	
P-75.01C	Animal productivity of <u>B. decumbens</u> variable stock- ing in dry season and medium in wet season.	Dry: 0.7-1.04-1.34 Wet: 2.1-2.1-2.1	CR 1	12.5 ha	IX-75 36 Months	C	
P-78.01C	Animal productivity of <u>A. gayanus</u> . Fixed stocking rate.	S.R.: 0.9-1.3-1.7 steers/ha	CR 1	12.5 ha	IV-78 48 Months	C	
P-78.02C	Animal productivity of <u>A. gayanus</u> . Low stocking in dry season and variable in wet season.	Dry: 0.7-0.7-0.7 Wet: 1.6-2.3-3.0 steers/ha	CR 1	12.5 ha	IV-78 48 Months	C	
P-78.03C	Comparison of beef production between <u>S. capitata</u> , <u>D. ovalifolium</u> , <u>Zornia</u> , <u>P. phaseoloides</u> with <u>A.</u> <u>gayanus</u> .	<u>S. capitata</u> + <u>A. gayanus</u> <u>D. oval.</u> + <u>A. gayanus</u> <u>Zornia</u> + <u>A. gayanus</u> , <u>P.</u> <u>phas.</u> + <u>A. gayanus</u> , <u>A. gay.</u> alone	CRB 2	20 ha	V-78 36 Months	C	
P-78.04C	Comparison of beef production between <u>A. gayanus</u> , <u>B. decumbens</u> , <u>B. humidicola</u> and <u>P. maximum</u> .	<u>A. gayanus</u> , <u>B. decum-</u> <u>bens</u> , <u>B. humidicola</u> , <u>P. maximum</u> .	CRB 2	16 ha	V-78 36 Months	C	
P-78.05C	Combinations of <u>P. phaseoloides</u> and <u>B. decumbens</u> . For beef production.	<u>P. phaseoloides</u> in: Blocks Stips	CRB 2	12 ha	V-78 36 Months	C	
P-78.06C	Combinations of <u>P. phaseoloides</u> and native savanna for beef production. Two stocking rates	0.25 animals/ha 0.50 animals/ha	CRB 2	24 ha	V-78 36 Months	C	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beef Production

SECTION: Pasture Utilization

SCIENTIST: Osvaldo Paladines

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Requirements	Date/ Duration	Location	REMARKS
-77.01Q	Grazing management of <u>C. pubescens</u> with <u>P. maximum</u> , <u>A. gavanus</u> , <u>B. decumbens</u> .	Rest: 4-6-8 wee. Graz. Press: High-Low Fert.: 100-200-400 500-2000-4000 Lime	SP 3	1.2 ha	IX-77 36 Months	Q	
-77.02Q	Continuous grazing on <u>C. pubescens</u> + <u>S. guianensis</u> 136, 184, <u>P. maximum</u> , <u>A. gavanus</u> , <u>B. decumbens</u> . Forage production and animal weight gain	Legume: Stylo 13-184 Grass: P - A - B	SP 8 for yield	1.1 ha	X-77 36 Months	Q	
-78.01Q	Animal productivity of the native pasture ..	-	CR 2	6 ha	VI-78 36 Months	Q	
-78.02Q	Grazing management of <u>D. ovalifolium</u> with <u>P. maximum</u> , <u>A. gavanus</u> , <u>B. decumbens</u> .	Rest.: 4-6-8 wee. Graz. Pres.: High-Low	SP 3	1.5 ha	V-78 36 Months	Q	
-78.03Q	Continuous grazing of <u>D. ovalifolium</u> with <u>P. maximum</u> , <u>A. gavanus</u> and <u>B. decumbens</u> . Forage production and animal weight gain.	Legume: <u>D. ovalifolium</u> Grasses: P-A-B	SP 8 for field	1.0 ha	V-78 36 Months	Q	
-78.04Q	Intake and digestibility of 3 <u>S. capitata</u> , with sheep.	<u>S. capitata</u> No. 1019 1078 - 1315	CR 8 sheep	0.3 ha	X-78 8 Months	Q	

CURRENT RESEARCH ACTIVITIES/EXPERIENCES

PROGRAM: Beef

SECTION: Breeding

SCIENTIST: Dr. E.M. Hutton

[illegible]

1.

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEEF

SECTION: PLANT PROTECTION

SCIENTIST: JILLIAN M. LENNÉ

num- er	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Detection, identification and assessment of any disease problems in new germplasm under primary evaluation.	surveys each 1-2 weeks			Cont.	Q	
2	Detection, identification and assessment of any disease problems in new germplasm under primary evaluation.	Surveys each 3-4 weeks.			Cont.	C	
3	Detection, identification, and assessment of disease problems in legumes and grasses under further evaluation.	Visual inspection of established experiments			Cont.	EL Q C	
4	Detection, identification and assessment of diseases of weeks in forage plots.	Inspection of established experiments			Cont.	EL Q C	
5	Investigations on the effect of burning on survival and diseases of <i>Stylosanthes capitata</i> .	5 accessions, 2 treatments	RB 10 reps	600 M2	Cont.	EL	
6	Investigations on the effect of burning on survival and diseases of forages.					Q C	Experiment the process establishment
7	Effect of <i>Camptomeris leucaenae</i> on <i>Leucaena</i> species	28 accessions, 2 treatments	RB 3 reps			Q	Experiment the process establishment
8	Effect of <i>Meloidogyne</i> sp. on various tropical forage legumes.	Field trial				C	Experiment the process establishment
9	Effect of <i>Meloidogyne</i> sp. on various tropical forage legumes.	pot trial				PAL	Experiment the process establishment

SCIENTIST: JILLIAN M. LENNE

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Requirements	Date/ Duration	Location	REMARKS
10	Effect of <i>Sclerotium rolfsii</i> on <i>S. capitata</i> 1019	Pot trial				PAL	Experiment the process establishment
11	Effect of <i>Cercospora</i> sp. on <i>Panicum maximum</i>	Field trials				Q C	Experiment the process establishment
12	Effect of <i>Cercospora</i> sp. on <i>Panicum maximum</i>	Pot trial				PAL	Experiment the process establishment
13	Effect of <i>Colletotrichum</i> spp. on promising forage legumes	Continuous screening of legumes with new isolates	RB 20 reps			PAL	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPER. ENTS

PROGRAM: Ganado de Carne

SECTION: Entomología

SCIENTIST: Mario Calderón

Num- ber	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
MC-1	Estudio de la biología del Barrenador del tallo del <u>Stylosanthes</u> spp.	<u>Stylosanthes guianensis</u> <u>Stylosanthes capitata</u> <u>Stylosanthes scabra</u>			1 1/2 años	C y Q	Trabajo de campo y laboratorio
MC-2	Estudio de la biología del Perforador de los botones del <u>Stylosanthes</u> .	<u>S. guianensis</u> <u>S. capitata</u> <u>S. scabra</u>			1 1/2 años	C y Q	Trabajo de campo y laboratorio
MC-3	Estudio de la incidencia del barrenador del tallo y del perforador de los botones del <u>Stylosanthes</u> en diferentes zonas de los Llanos Orientales de Colombia.	<u>S. scabra</u> <u>S. capitata</u> - 1019			2 años	Llanos Orientales	Se utilizarán fincas aproximadamente.
MC-4	Estudio del rango de hospederos del barrenador del tallo del <u>Stylosanthes</u> spp. en el Valle del Cauca y Cauca.				1 año	Valle del Cauca y Cauca	Chequeo de la vegetación en especial leguminosas nativas.
MC-5	Identificación taxonómica y estudio biológico de parásitos y predadores del perforador de los botones del <u>Stylosanthes</u> spp.				2 años	C y Q	Trabajo de campo y laboratorio
MC-6	Identificación taxonómica y estudio biológico de parásitos y predadores del barrenador del tallo del <u>Stylosanthes</u> spp.				2 años		
MC-7	Estudio de la fluctuación de las poblaciones de insectos en diferentes ecotipos de <u>Stylosanthes</u> y otras leguminosas cuando están asociados o no con gramíneas.		13		2-3 años	C y Q	
MC-8	Caracterización de la enfermedad antracnosis y de la plaga barrenador del tallo del <u>Stylosanthes</u>		3		1 1/2 años	C	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beef Production

SECTION: Animal Health

SCIENTIST: E. Aycardi

Number	TITLE: PURPOSE	TREATMENTS	Design/REPS	Requirements	Date/Duration	Location	REMARKS
SA-1	Evaluation and monitoring of preventive medicine schemes in animals under and for experimentation and for inclusion in future beef production systems.			C and P Labs.	VI-77 Ind.	C	Also in "Cerrado" Center - Bras
SA-2	Identification, quantification, register and monitoring of animal health alterations in animals under and for experimentation.			C and P Labs.	VI-77 Ind.	C	
SA-3	Pathogenesis of Leptospirosis in range cattle and effect of antibiotic application.	30 Antibiotic I 30 Antibiotic II 35 Control		95 cows	VII-76 2 yrs.	LL*	* "Las Leonas" private farm
SA-4	Evaluation of a bacterin for the prevention of Leptospirosis in heifers.	50 Vaccinated heifers		50 cows	IX-77 18 months	C	Animals in test herd.
SA-5	Animal Disease Inventory for area of impact.				X-77 2 yrs.	A*	* Area of impact
SA-6	Gastro-intestinal parasite profile and seasonal variations in calves pre and post weaning and their mothers to design strategic use of nematocides.			80 pregnant cows	II-78 18 months	C	Animals also in another project
SA-7	Resistance to challenge in pregnant cows vaccinated with Leptospira bacterin.	8 Control 8 Vaccinated		16 pregnant cows	IV-78 10 months	P	Also Thesis for M.S. Brasil candidate.

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Ganado d. Carne

SECTION: Animal/Management

SCIENTIST: C.Patrick Moore

[illegible]

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beef

SECTION: Animal Management

SCIENTIST: Ingo Kleinheisterkamp

[illegible]

NUMBER	TITLE: PURPOSE	A R E A	DESIGN/REPS	REQUIREMENTS	DATE/DURATION	LOCATION	REMARKS
1	COMPUTER TO DATA BANK ON MARKET INFORMATION : To continue updating information on stocks, slaughter, input and output prices, etc. for use of Management and Program.	Tropical Latin America by countries	CAN	Documentation, Library and computer support	Continuous	CIAT	
2	SURVEY OF IMPACT AREA - ECONOMIC GEOGRAPHY : Isocurves of input-output prices based on transportation costs will help select priority areas within target areas.	Target areas	CAN- TTC- IK	Land systems completed - Travelling to collect prices and transporta- tion costs, com- puter time.	Sept./78 July /80	CIAT	Travelling required
3	COORDINATION OF BENCHMARK STUDIES ON LIVESTOCK ECONOMICS OF SELECTED COUNTRIES: Geared to analysis of national economic policies, conducted by economists in other institutions.	Brazil, Argentina, Uruguay, Ecuador, Colombia.	A.Valdes/ CAN	Budget: Collabo- rative Program CIAT - F.F.- computer time.	July/75 Dec./79		
4	EX-ANTE SOCIAL EVALUATION OF IMPACT : Potential impact on consumption, total expected benefits and its distribution.	Colombia (Demand: Colombia, Brazil; Venezuela, Peru, Ecuador, Bolivia, Argentina, Paraguay, and Chile).	Eder /CAN	Budget for es- tablishing and out- of CIAT computer expenses, com- puter time.	Jan/78 Dec/79	CIAT	Travelling required.
5	MARGINAL ECONOMIC EVALUATION OF EXPERIMENTS: To help focus Program's research and help illustrate relevance; also useful for training.	3 main research sites	CAN	Fully processed experiment data and computer ac- cess.	Continuous	CIAT	
6	HATSEN MODEL: Improve flexibility of model to incorporate risk through joint probability distributions.		CAN Systems spe- cialist.	Biometrics & systems support.	June/78 June/79	CIAT	
7	TECHNOLOGY EVALUATION AT FARM LEVEL : Economic evaluation using final results from herd system Experiment.	Colombian Llanos	CAN	Computer access	1978	CIAT	
8	* SIMULATION MODEL OF BREEDING HERDS GRAZING IN LOWED PASTURES: To generate input-output coefficients to evaluate new tech- nology at farm level and help define "strategic		J. Levine (VRA) CAN -OP- IK	Biometrics and Systems support	1978-1979	CIAT	
9	ETES (ESTUDIO TECNICO-ECONOMICO DE SISTEMAS DE PRODUCCION) : To provide actual parameters of existing production systems (field study monitoring selected farms).	Colombia Brazil Venezuela	IK-CAN	Biometrics and Systems support	1978-1980	CIAT	Travelling required.

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEEF

SECTION: TRAINING/REGIONAL TRIALS

SCIENTIST: LUIS E. TERGAS

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
LET 1	Evaluation of adaptation of tropical pastures ecotypes to three soil fertility levels under grazing conditions.	Grass ecotypes (18) Legume ecotypes (12) F1: Native fertility F2: 150 lime, 100 P ₂ O ₅ , 100 N(on grass) F3: 2 tons lime, 200 P ₂ O ₅ , 50 K ₂ O, 200N (on grass) M.E.	Strip plot 2R	3,850 m ² 20 ani- mals	Sep/77 Indef.	Q	Gustavo A. Urre and trainees participating course on forage production and utilization.
LET 2	Evaluation of adaptation of tropical fodder species to three soil fertility levels under clipping conditions	Fodder species (8) F1: Native fertility F2: 150 lime, 100 P ₂ O ₅ , 100 N(on grass) F3: 2 tons lime, 200 P ₂ O ₅ , 50 K ₂ O, 200N (on grass) M.E.	SP 2R	8,000 m ²	Sep/77 Indef	Q	Same
LET 3	Regional trial on adaptation of forage species selected by CIAT's Beef Program	Grass ecotypes (3) Legume ecotypes (11) 50 kg P ₂ O ₅	RCB 3R	3,000 m ²	Ap/78 2 yrs	Q	Regional trials in collaboration with national institutions throughout the impact area.

2. BEAN PROGRAM REGISTRY

1978: A and B

BEAN PROGRAM SUMMARY

Initial summary of data from Profiles, Registers and Questionnaires. Includes 97 and 119 separate research activities/experiments for the First and Second (A and B) semesters respectively; or a total of 216 separate activities for the year.

I. Sectional Resources - estimated percent of resources and efforts.

A. Major Activities

1. Research	77 %
2. Training	14
3. Consultation/Outreach	9

B. Research Strategies

1. Identification of constraints	12
2. Development of research methodology	18
3. Direct problem solving activities	70

C. Location of Experiments

1. Field	87
2. Laboratory	4
3. Greenhouse/Growth Chamber	9

D. Land Used (information from register indicating actual requirements of experiments)

1978A:	Palmira	22.33 ha	48% of total
	Off-Palmira	<u>23.76 ha</u>	52% "
		46.09 ha	total
1978B:	Palmira	31.71 ha	54% of total
	Off-Palmira	<u>27.14 ha</u>	46% "
		58.85 ha	total

Other sites: Pasto (Obonuco), Huila, Tuluá, Candelaria, La Selva (Rio Negro), Antioquia, Manizales, Medellín, Bogotá.
Ecuador, Guatemala, Brazil plus international trials

Of the off-Palmira sites used, only Thung mentioned work at Quilichao. The highest percentage of off-station work is done at Popayán (13% of total).

E. Type of Experiments

1. Agronomic: density studies, association and monoculture studies, herbicide studies, yield trials, etc.
2. Adaptation: temperature stress, soil condition stress, day-length, etc.
3. Screening: diseases and insects
4. Selection: breeding materials
5. Clean seed production

II. Major Constraints

Listed in order of descending importance, according to responses on questionnaires

Equipment
Labor
Field Operations
Controlled Growth Facilities
Data Processing
Instrumentation
Greenhouse
Assistance
Land
Site at 2000 m elevation
Budget

2. BEAN PROGRAM REGISTRY

1978: Semester A

PROGRAM: BeanSECTION: Agronomy preliminary trialSCIENTIST: Michael Thung

	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	- Yield testing Prelim . yield trial - evaluate the advanced breeding-line to di	R = 130 lines Bl= 328 lines colored 299 lines	RBD/3	ha 2.5	March 15/78 4 mo	P S2N	*
2	" " " "	R = 122 Bl = 300 Colored 265	RBD/3	ha 2.3	March 27/78	Cande- laria	
3	Screening for low soil phosphorus tolerance and high Al+Mn tolerance	1.P1 0 2.P2 50 3.P3 300 4. lime 0 5. lime 5 ton	SP/4	ha 0.8	April 28/78 4 mo	Q Div 3	*
4	Yield evaluation on Diacol Calima Variety. Effect of seed quality on yield and the response to fertilizer	S.Q.: clean seed 1 clean seed: 1 certified seed: 1 farmers seed: 4 NPK:0;20-60-20 and 40-120-40	RBD/4	ha 0.2	April 2/78 4 mo	Cande- laria	
5	Artificial shading in MC Bean-Cassava The competition between light v.s. Water+ Nutrient	Planting date .4 Sys. 1 monobean 2 bean+shade 3 bean+cass.	RBD/4	ha 0.4	Mayo 3/78 4 mo	P S1 Center	
06	Yield improvement by clean seed in farmer fields in Departamento del Huila	SQ: 1 Clean seed 2 certified 3 farmers seed NPK:0;20-60-20 and 40-120-40	2 x RBD/4	ha 0.1	March 18/78 5 mo	Huila	**

* See appendix continuing study.

** Joint Exp. with J. H. Sanders.

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS 1978A

PROGRAM: BEAN

SECTION: AGRONOMY PRELIMINARY YIELD TRIALS

SCIENTIST: MICHAEL THUNG

Number	TITLE : PURPOSE	TREATMENTS	Design/ REPS	Require- ments	Date/ Dura- tion	Loca- tion	REMARKS
1*	Preliminary yield trials of the advanced breeding materials, progenitors and Germplasm bank accession at CIAT Station	Red mat. : 130 Black mat.: 328 Colored : 229	RBD/3	2.5 Ha.	1 March 3 mo	P S2	
2*	Preliminary yield trials of the advanced breeding materials, progenitors and Germplasm bank accession at Candelaria/Popayán 1979	Red mat. : 130 Black mat.: 328 Colored : 229	RBD/3	2.5 Ha.	15 March 3 mo	Cande- laria	On low fertil soil condition
3**	Screening to high Aluminum and Manganese toxicity and to low soil phosphorus of the P-and advanced breeding materials	1. P1 : 0 2. P2 : 50 3. P3 : 300 4. lime 0 5. lime 5 188 P Lines.	Kg P ₂ O ₅ Tons	SP/4	0.8 ha	18 May 3 mo	Q Div 3
4.	On small farm trials at Huila	3 seed qualities 3 fertilizer levels	2 x RBD/3	18 x 0.1 ha	March 18 3 mo	Huila	
5.	Yield evaluation of Diacol Calima Effect of different seed quality and fertilizer levels on yield	Seed quality : 6 Fertilizer level : 3	RBD/3	0.3 ha	April 2 3 mo	Candela ria	

PROGRAM: BEANSECTION: BREEDINGSCIENTIST: SHREE P. SINGH

TITLE: PURPOSE	TREATMENTS	De-sign/ REPS	Re-quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
Study of root morphology and phyllotaxy of all parents being used in BAYAB and their role in breeding for better plant architecture.	To date 25 parents approximately 50 more to go.	RCB 10 Rep each	Sand- box 2 x 5m	Nov77 contin- uing	CIAT close to	Initiated in co- operation with Luke Waters of OSU, Oregon, USA
		plant used as Rep			Screen houses	
Genetic and Cytological Studies of possible male steriles and their utilization in bean breeding.	13 possible male steriles Identified from Go8063 and 5 from a		0.1 ha & Lab	End of 1978	CIAT	Jeff White collaborating in cytological works
	segregating popula- tion.		Space			
Genetical studies of variation in hypocotyl length and diameter and its effect on plant architecture.	4 cvs with long, 4 cvs with short and 3 cvs with thick hypoco	RCB 3 Reps	0.5 ha & 100 Pots in	78-80 3 Yrs.	CIAT & Popa-	While making ge- netic studies desirable attribut
	tyls their F1,F2,F3 and BC generations		Screen House		yán	tes will be trans- ferred in deficien cvs.
Inheritance of tolerance to extreme temperatures (low and high) and breeding for adaptation to arrange of temperatures.	10 cvs their F1,F2, F3,F4 and backcross generations	RCB 2 Reps	1.5 ha 200 pots	78-81 4 Yrs.	CIAT Popay. Obonuco	
			in Screen- House		Natai- ma	
Effectiveness of EMS and Na Azide as mutagens on homozygotes and heterozygotes and its implications in bean breeding.	cvs = 10 Mutagens=EMS, NA Azide Tret timings=4 hr. Dosage= 0.1 ml		Lab- space	78-82 5 Yrs	CIAT	

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: FRIJOL

SECTION: AGRONOMIA FRIJOL VOLUBLE

SCIENTIST: JEREMY DAVIS

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
7801	Ensayo Internacional de Rendimiento de Variedades (Progenitores - 2º ciclo cruzamiento)	Variedades	6 x 6 Latice 3 Reps	3000m ²	4 meses	CIAT S-2(N)	Asociado con ma ICA H-210 Resp.: S. Garc
7802	"	"	"	"	25/4/78 5 meses	Popayán (COL.)	Asociado con M Yucatán Res: G. Tejada
7803	"	"	"	"	21/3/78 8 meses	Pasto (COL)	Asoc con ICAV5 Colaboración I Obonuco, I.A. Néstor Angulo
7804	"	"	"	"	27/2/78 8 meses	Bogotá (COL)	Asoc con ICA V Colaboración I Tibaitatá, Dr. Bastidas
7805	"	"	"	"	Oct 78 8 meses	Quito Ecuador	Asociado Colaborac. IN Ing. C.Chiriba
7806	"	"	"	"	Julio78 4 meses	Chimal- tenango GUATEM.	Asociado Colaborac. IC Ing. S.H.Oroz
7807	"	"	"	"	Agos.78 4 meses	Atesca- dempa GUATEM.	Asociado Colaborac. IC Ing. S.H.Oroz
7808	Ensayo Uniforme de Rendimiento (Progenitores - 3er. ciclo cruzamiento)		5 x 5 latice 4 Reps	3000m ²	Junio78 8 meses	CIAT O-2 N	Sistema=Relevo con maiz ICA H Resp. I.A. Ger Tejada
7809, 7810	"	"	"	6000m ²	Sept.78 4 meses	"	Sistemas: -Monocultivo -Asociación

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: FrijolSECTION: Agronomía Frijol VolubleSCIENTIST: JEREMY DAVIS

Number	TITLE: PURPOSE	TREATMENTS	Design/REPS	Requirements	Date/Duration	Location	REMARKS
811	Ensayo Uniforme de Rendimiento (Progenitores - 3er. ciclo cruzamiento)	Variedades	5 x 5 latice 4 Reps	3000m ²	Mar.78 10 meses	Rio Negro COLOM.	Sistema=Relevo con maíz ICAV45 Colab. ICA-La Sva. Dr.H.Tobon
812	"	"	"	"	21/3/78 8 meses	Pasto COLOM.	Sistema=Asoc.ma ICA V507 Colab. ICA Obon IA. Néstor Angu
814	Ensayo Preliminar de Rendimiento, F ₃	300 Líneas F ₃ (S.I.)	B.C.A. 2 Reps	6000m ²	14/4/78 4 meses	S-2 N CIAT	Asoc. maíz ICA H-210, más tamizado de las líneas con BCVM y Empo
815	"	"	"	"	25/4/78 5 meses	Popayán	Relevo con maíz Yucatán, más tamizado con las líneas con Antrac
816	Ensayo Preliminar de Rendimiento	20 selecciones de 'Cargamento' más 5 testigos. -	B.C.A. 2 Reps	550m ²	26/4/78 5 meses	Popayán	Relevo con maíz Yucatán
817	Genotipos Frijol x Maíz en ASoc. y Monocultivo	12 variedades Frijol, 8 tipo IV, 4 tipo III y 3 de Maíz, alto, medio y bajo	6 x 6 latice 3 Reps	7000m ²	15/3/78 6 meses	O-1 N CIAT	Maíz monocultivo a la densidad óptima y a la densidad de asoc. Resp S
818	Ensayo de Bordes: Cuantificar el efecto de espacios no sembrados sobre el rendimiento de frijol voluble y maíz en sistemas de monocultivo y asociación.	Monocultivos de frijol P589 y Maíz H-210 y asociación	4 Resp	3200m ²	6 meses	S-2 N CIAT	Susana García y Jaime Muñoz (Bi
819, 820	Multiplicación de semillas limpias	Variedades volubles	-	6000m ²	16/3/78 4 meses	O-1 N CIAT	
821	Aspectos temporales de la competencia maíz/frijol	Maíz H-210 2 densidad, Frijoles P566 y P364 en monocultivo y asociación	B.C.A. 4	5000m ²	Abril78 6 meses	O-2 N CIAT	Tesis de Am. Clark
822	Poblaciones F2: seleccionar	-	-	3000m ²	Abril78 4 meses	O-1 N CIAT	

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEAN AGRONOMYSECTION: INTERNATIONAL TRIALSSCIENTIST: OSWALDO VOYSEST

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
	<u>YIELD TRIALS:</u>						
	Preliminary Yield Trial: Black	81 Varieties from germplasm bank	Lattice 9 x 9 3 reps	4300m ²	3 months	C-78A	Screening test conducted only when non-tested material is available.
	Preliminary Yield Trial: Non-Black	144 Varieties from germplasm bank	Lattice 12 x 12 3 reps	7500m ²	3 months	C-78A	"
	Advanced Yield Trial: Black	36 varieties: Best from previous Preliminary Yield Trials	Lattice 5 x 5 3 reps	2000m ² each site	6 months (2 seasons)	C-78A P-78A	
	Advanced Yield Trial: Non-Black	36 varieties: Best from previous Preliminary Yield Trials	Lattice 5 x 5 3 reps	2000m ² each site	6 months (2 seasons)	C-78A P-78A	
	International Yield and Adaptation Nursery IBYAN - Black	25 Var. 20 Standard 5 Local checks Structure for 1978 A. Standard varieties -3var. tested every yr. -2var. from local checks of previous IBYAN's -15 CIAT breeding lines	Lattice 5 x 5 3 reps	1350m ²	One yr. from April to March	Around 100 trials/year	Objectives fixed but basic structure developing through years according to the development of CIAT breeding program.
	International Yield and Adaptation Nursery IBYAN - Non-Black						
	<u>SEED PRODUCTION</u>						
	Clean seed production for IBYAN s	50 varieties	--	2 ha.	6 months (2 seasons)	Dagua	
	Clean seed production for Bean Team use	75 varieties per cycle	--	2 ha.	3 months	CIAT (Lote E)	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: _____

SECTION: _____

SCIENTIST: O. V. V. V. V.

TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
<u>AGRONOMIC TRIALS</u>						
Chemical weed control	Dual (2 lt.) + Afalón (1 Kg) Dual (2 lt.) + Tok D.N. (6 lt.) Prowl (2 lt.) + Tok D.N. (6 lt.) Preforán (7 lt.) + Tok D.N. (6 lt.) Afalón (1 Kg.) + Prowl (2 lt.) Afalón (1 Kg.) + Preforán (7 lt.) Control (weeds) Control(handweeded 10-20-30-40 days & mat)	R.C.B. 4 Reps.	700m ²	6 months (2 sea- sons)	C.78A	
Weed control in narrow rows	Vars: -Types I, II and III Row Spacing: -30, 40, 50 and 60 cm. Chemical control: -with and without Hand weeding -None & up to 30 days	B.C.R. Split- plot 3 reps.	1500m. ²	6 months (2 sea- sons)	C.78A	
Mulches for weed control and moisture conservation	Type: - Rice hulls Levels: - 8 & 16 ton/ha Time of application: - Cotyledonary leaves stage - Trifoliate leaves stage	B.C.R. 4 reps.	1350m ²	3 months	C.78A	Further devel- opments of th studies inclu different typ of mulches.
Consumptive use of water by beans	Varieties: - Types I, II and III Time of irrigation: - 75, 50 and 25% of unavailable water in soil. Check: - Plot at field capacity.	B.C.R. 4reps.	1350m ²	3 months	C-78A	After determi ing the amount of water stud on frequencies of irrigation and oments of application.

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEANS

SECTION: Pathology - Mycology

SCIENTIST: H. F. Schwartz

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Bacterial Blight - Identify sources of tolerance, screen breeding progeny	Inoculate with bacteria/ evaluate/select	RCB/3 for parents 1 rep/ progeny	Herb. Insect. Cultiv. Irrigat. 1.5	Feb. 5 to May 10 3 mos.	PE1/	Excellent screen for common blight and angular leaf (natural infection)
2	Rust Evaluation - Test selections of other disciplines for resistance	Inoculate with rust/ evaluate 175 entries	1 rep.	ditto .5 ha	Ap. 6 to Jul. 10 3 mos.	PO1 S	Inoculated May 2
3	Rust Evaluation - Germplasm entries	Inoculate with rust/ evaluate 1.780 entries	1 rep	ditto 1.0 ha	Ap. 7 to July 10 3 mos.	PO1 S	Inoculated
4	Influence of cropping system upon rust development - determine effect of rust on beans grown in monoculture vs. association	1 determined var. 1 climbing var. inocu- lated, non-inoculated, prot. dis. develop. yield	RCB 3 rep.	ditto .2 ha	Ap. 6 to Jul. 10 3 mos.	PO1 S	Inoculated
5	Tolerance to Rust - evaluate slow rusting character, tolerance, etc.	24 entries inoculated protected, disease development, yield	RCB 3 rep.	ditto .2 ha	Ap. 6 to July 10 3 mos.	PO1 S	Inoculated
6	Angular Leaf Spot - Identify sources of resistance, develop inoculation techniques	250 entries inoculated/evaluated	1 rep.	ditto .2 ha	Ap. 15 to Aug. 1 3 mos.	Popa- yán	Inoculated May 3
7	Root Rot - Identify sources of resistance to Fusarium yellows	250 entries inoculated non-inoculated	2 rep.	ditto .2 ha	Ap. 15 to July 1 2 mos.	Popa- yán	Will evaluate after June 1
8	Root Rot - Identify sources of resistance to Fusarium solani	250 entries evaluate natural infection	2 rep.	ditto .2 ha	May 5 to May 15 2 mos.	PM1 S	Will evaluate during May
9	Root Rot - Identify sources of resistance to Rhizoctonia solani	800 entries inoculated evaluated	2 rep.	-	Ap. 1 to May 1 1 mo.	CIAT green- house	Current! evaluating

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEANS

SECTION: Pathology - Mycology

SCIENTIST: H. F. Schwartz

Number	TITLE: PURPOSE	TREATMENTS	Design/REPS	Requirements	Date/Duration	Location	REMARKS
10	Anthracnose Screening - Screen parents and progeny for resistance	Breeding materials, parents, etc. Inoculate, evaluate	1 rep.	ditto 2.0 ha	Ap. 1 to July 1 3 mos.	Papayan	Inoculated April 10 (collaboration breeding)
11	Disease observation/Adaptation - screen parents and progeny for resistance to all pathogens present in Medellín	natural epidemics susceptible spreaders planted	1 rep.	2.0 ha ditto	Mar 15 to June 15 3 mos.	Medellin	(Collaboration breeding and ICA)
12	Disease observation/Adaptation - Screen parents and progeny for resistance to all pathogens present in Pasto	Natural epidemics susceptible spreaders planted	1 rep.	ditto 1.5 ha	Mar. 1 to Sept. 1 6 mos.	Pasto	(Collaboration breeding and ICA)
13	Miscellaneous investigaciones on methodology, inoculum concentrations, evaluation procedures, etc.	Various	-	-	Continuous	CIAT greenhouse	
14	Clean seed Production	Various	1 rep.	-	Continuous	CIAT screen-house	

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEANS

SECTION: ENTOMOLOGY

SCIENTIST: A.v.SCHOONHOVE

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Effect of Tomelon herbicide on <u>Ipomoea</u> and phytotoxicity to beans.	12 treatments. 20-0 days before planting beans. 2 varieties.	RB 4 reps	1200	march 21 3 mo.	D ₁	Objective to reduce labor cost of <u>Ipomoea</u> control
2	Comparison of effectivity of granulated sistemic insecticides for leafhopper control.	12 products, 1kg IA/ha	RB 3 reps	1200	March 25	D ₁	
3	Varietal resistance to <u>Heliothis</u> attack	150 varieties between cotton of various growth stages.	RB 2 reps	1000	April	Tulua	
4	Effect of furadan seed treatment on germination and insect control.	12 treatments from 2.5-20% by weight. 1:1 and 1:4 diluted 2 varieties.	RB 2 reps	250 m ²	April 25 3 mo.	D ₁	
5	Cultural control leafhoppers 1: effect of residual maize as soilcover on leafhopper.	2 varieties. 5 treatments (1 resistant, 1 susceptible).	RB 4 reps	1500	June	D ₂	
6	Cultural control leafhoppers 2: of straw and other soil covers on leafhoppers.	2 varieties. 5 treatments	RB 4 reps	1500	June	D ₂	
7	Cultural control leafhoppers 3: effect various graminaceous on leafhoppers in beans. (<u>Leptochloa</u> and <u>Eleusine</u>) weeds.	2 varieties factorial with 12 treatments.	factorial 4 reps.	2500	June	D ₂	
8	<u>Empoasca</u> resistance: Climbing beans	300 F ₃ families	1 rep. 15 seeds each	500	June	D ₂	All <u>Empoasca</u> resistance nurseries separated in black and non blacks
9	Inter golden mosaic nursery. and int. rust resistant nursery	250 entries and 60 entries	2 reps 40 seeds each	1500	June	D ₂	"

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEANS

SECTION: ENTOMOLOGY

SCIENTIST: A.v. SCHOONHOVE

Number	TITLE: PURPOSE	TREATMENTS	Design/REPS	Re-quire-ments	Date/Duration	Location	REMARKS
10	Elite <u>Empoasca</u> resistant materials (resistance confirmation)	180 entries, 2 reps 40 seeds each	RB 2 reps	1000	June	D ₂	All <u>Empoasca</u> resistance nurseries separated in black and non blacks.
11	Non- <u>P. vulgaris</u> materials. 10 <u>P. acutifolius</u> . 250 <u>P. lunatus</u> Unknown additional ones.		1 rep.	1	June	D ₂	
12	Breeding nurseries: Breeding VEF Breeding EP	780 and 768 entries, resp.	2 reps and 1 rep.	2000	June	D ₂	
13	Mite resistance (<u>Tetranychus</u>)	150 entries	2 reps	500	June	D ₂	
14	Screening resistance to 2 mites	+ 50 var's / week	RB 2 reps	Screen house	continuous	screen house	
15	Population fluctuation of chrysomelids	every month 500 m ² sampled 2x/months			All year	D ₂	
16	Resistance <u>Zabrotes subfasciatus</u> in P. and G. accessions		3 reps 50 seeds	on farms	3 - 6 months	5 farms in Valle and Cauca	
18	Miscellaneous studies on biology of leafhoppers, chrysomelids, Bruchids.				Continuous	screen house and Lab.	

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEAN

SECTION: ENTOMOLOGY

SCIENTIST: A. v. SCHOONHOVEN

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
	The following relates to breeding for <u>Empoasca</u> resistance per sé (N. Gallway)						
NG 14	Search for antibiosis. Correlation early insect counts vs. late damage		RB 4 reps	900 m ²	June	D ₂	
NG 15	Transgressive segregation: compare best and worst progenies of 6 crosses with parents.	No. of treatments depends on availability of seeds.		800 m ²	June	D ₂	
NG 16	Compare resistance level of indiv. generations in recurrent sel. program.	300 families.	2 reps.	2200 m ²	June	D ₂	
NG 17	Compare resistance levels of selections made by CIAT and its programs and Nathional programs.	230 entries	2 reps.	1700	June	D ₂	
NG 18	Correlation between flowering and maturity dates vs resistance.	70 families	2 reps.	500	June	D ₂	
NG 19	Leaf morphology on <u>Empoasca</u> damaged and non-damaged plants	40 families (treated, non treated.	2 reps.	400	June	D ₂	
NG 20	Nymphal capture by trichomes	4 varieties (non treated vs low level treated)	2 reps.	100	June	D ₂	
NG 21	Compare isolines NEP-2 and San Fernando (induced color mutants)	2 varieties	4 reps.	40	June	D ₂	Total acreage 1 ha.

PROGRAM: BeansSECTION: PhysiologySCIENTIST: Dr. D.R. Laing

n-	Limited Time Frame Experiments TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
301	Effect of CO ₂ fertilization at three growth stages on Porrillo Sintetico	-20,0,+20 DFF	RB (6)	300 m ²	Mar 18 75 d.	M2S	Final experime with CO ₂ of this type
302	Preliminary evaluation of red light break screening method for growth habit stability with 20 varieties (II and II)	Red light (15 min)	S	500 m ²	Apr.	01S	First experimen following Corne work
303	Comparative physiology of Type I and Type II growth habits (with 5 I and 5 II types included)	Growth analysis	RB (4)	3000m ²	Mar 19 90 d.	M2S	Ph D thesis Dr. Jeff White
304	Comparative physiology of six grain legume species (Vigna, Glycine, Cajanus, Phaseolus)	Growth analysis	RB (4)	2000m ²	Mar 20	M2S	First of this type in CIAT
306	Effect of photoperiod extension of growth phase on four growth habits, 20 var. (4x5)	Photoperiod 16h30	RB (2)	2200m ²	Apr. 100 d.	01S	Final experiment of this parti- cular type
310	Preliminary evaluation of screening method for seed damage resistance (100 var.)	Drop Damage	Lab. (4)	-	Mar 150 d.	-	Collaboration with Dr.T.Edge
311	Preliminary evaluation of screening method for seedling vigour (40 varieties).	Vigor Screening	Lab. (3)	-	Feb 200 d.	-	Collaboration with Dr.T. Edge
315	Density response in six varieties (I-IV at four densities).	10,20,30,40 p/m ²	RB (4)	2000m ²	Mar 28 80 d.	M2N	Repeat of earli experiment
317	Herbicide evaluation (new products)	14 treatments	RB (3)	2500m ²	Apr. 80 d.	01S	Collaboration with other dis- ciplines
321	Analysis of growth of two varieties (II and IV) in maize assoc. and monoculture	5 treatments	RB (4)	5000m ²	Apr. 80 d.	02S	Collab. with Dr Davis, Ph D

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beans

SECTION: Physiology

SCIENTIST: Dr. D. R. Laing

Number	On - going Program TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
305	Screening for photoperiod response in 374 advanced lines and 326 collections	18h and 12 h photoperiods	RB (2)	1250m ²	Apr. 120 d	01S	Continuing work
307	Screening for density response in four growth habits (50 varieties)	Three planting Systems	RB (3)	5000m ²	March 90 d.	M2N	Second experiment
308	Screening for temperature adaptation Santa Fé (Antioquia) 360m	250 var.	RB (3)	4500m ²	Apr. 80 d.	-	Second group 250 entries
309	Screening for temperature adaptation Manizales (2300 m)	250 var.	RB (3)	4500m ²	-	-	"
312	Screening for temperature adaptation Popayán (1900 m)	250 var.	RB (3)	4500m ²	Apr. 100 d.	-	"
314	Screening for temperature adaptation Pasto (2600 m)	250 var.	RB (3)	4500m ²	Apr. 200 d.	-	"
7816	Screening for water stress resistance at flowering in types I,II,III, advanced breeding lines germplasm (~200 entries)	Wet/dry treatments	RB (3)	5000m ²	Jun. 110 d.	E2N	Second experiment dry sea

SCIENTIST: JOHN H. SANDERS

[illegible]

2. BEAN PROGRAM REGISTRY

1978: Semester B

SECTION: AGRONOMY PRELIMINARY YIELD TRIALS

SCIENTIST: MICHAEL THUNG

[illegible]

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

2B.2.1

PROGRAM: BEAN

SECTION: BREEDING I

SCIENTIST: STEVEN R. TEMPLE

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Special Increase of Interesting F3 families to enter 1978 VEF Trial	Spaced Planting to Inoculate with BCMV	2 Rows 50 plants	1.4 has	July- October	S-1 South	Cooperation F. Morales Currently Harvesting
2	Evaluation of F2 populations 152 Populations	Spaced Planting to inoculate BCMV and Rust	100-400 plts/ popla	1.2 has	Sept- Decem.	P-3 North	Cooperation F. Morales + H.F. Schwartz
3	Progeny Test of Single Plant Selections F3, F4, F5	Spaced Planting to inoculate BCMV and Rust 2.753 Families	50 plants per fam	4.5 has	Sept78 Jan 79	P-3 O-1 S-1	Cooperation F. Morales + H.F. Schwartz
4	Progeny Test and intermating for increased Resistance to X. phaseoli Females in Screenhouses	Inoculations with X. phaseoli	Families Sin Repl.	0.5 has	Sept- Dec.	E-1 Screen- house	Cooperation H.F. Schwartz
5	Test of MITA progenies	50 materials	3 Reps	0.2 has	Oct 78 Jan 79	S-1	Evaluation HFS
6	Final Cycle of Selection Methods. Study initiated by R. Swindell, in 8 hybrid populations	Bulk, Modified Bulk, and Single Seed Descent.	4 Reps	0.3 has	Oct 78 Jan 79	S-1	Also generate Seed for Yield Test
7	F2 Nurseries of 150 Populations in Dom Rep., Guatemala, El Salvador and Brazil (2 locations)	BGMV Spreaders to disseminate virus and Bemisia	Com. to Checks	Varies	Varies	-	See. Memo on BGMV for Details Coop. with G.Gálv.
8	VEF Nursery, for highland adaptation in cooperation with ICA	1436 entries 4 m rows	Non- rep.	1.2 ha	Sep 78 Jan 79	La Sel- va - Rionegro	Backstop for Popayán disease nurseries
9	Crossing for Mainstream and Special Projects: 1500 crosses annually, hand emasculatlon	12 pollinations per cross, + 50% efficiency, objective >10 F1 seeds/cross	(Monthly Planting in CIAT Screenhouses to control mites and distribute work load over 12 month period.)				
10	(Evaluation of Inter and Intrapopulation crosses of Howard Special interest studies with Kavid Mok, OSV. Those will	Gridley, Cambridge, and some be planted in Oct/Nov.	(Crosses Distributed between SKT, SPS, and J. Davis.)				

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: BEANSECTION: BREEDING IISCIENTIST: SHREE P. SINGH

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1.	Study of root porphology and phyllotaxy of-all parents being used in BAYAB and their role in breeding for better plant architecture	To date 80 parents evaluated	10 plants per treat.	Sand-box 2 x 5m	Nov 77 continuing	CIAT Palmira	Initiated in cooperation with Luke Waters of OSU, Oregon, USA
2.	Genetic and Cytological Studies of possible male steriles and their utilization in bean breeding	13 possible male steriles Identified from G03063 and 5 from a segregating population		0.5 ha	Sept 77 15 mo.	CIAT	Jeff White collaborating in cytological works
3.	Inheritance of tolerance to extreme temperatures (low and high)	10 cvs their F1, F2, F3, F4 and backcross generations	RCB 2 Reps	1.5 ha (Each location)	March 78 24 mo.	CIAT Popayán Obonuco	
4.	Effectiveness of EMS and Na Azide as mutagens on homozygotes and heterozygotes and its implications in bean breeding	cvs 7 & 3F2 pop. Mutagens =EMS, NA Azide Tret timings = 6-8 hrs Dosages = 0.05 - 0.1 ml.		1 ha/sem. Each loc.	March 78 5 years	CIAT Popay.	
5.	Inheritance of the lanceolate leaf character in dry beans	2 lanceolate mutants Their F1 F2, & backcrosses with normal types	RCB 2 Reps.	0.1 ha (Each location)	March 9 mo.	CIAT Popayán	
6.	Heterosis and in breeding depression within and between selected bush bean cultivars of different growth habits.	20 cvs their F1 and F2 generations	RCB 2 Reps.	0.5 ha (Each location)	Sept. 15 mo.	CIAT Popayán	

2B.2.3

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beans

SECTION: Agronomy

SCIENTIST: Jeremy Davis

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
7809-12	Uniform Yield Trial: To select varieties for wide and specific adaptation to locations and cropping systems.	10 Black + 12 Colored seeded varieties + 3 controls.	Lattice 5 x 5 4 reps.	1 ha. total	Aug/Spt. Jan/Feb	CIAT 02 ICA-L.S.	Association Relay Monoculture (Kenaf poles)
7823-25	Evaluation of Type IV Germplasm: adaptation, disease reaction and yield potential between 1850 and 2700 m.	1950 accessions	Unrepli- cated. Hill plots	0.75 ha total	Aug/Oct. Jan/Mch	Popayán ICA-L.S. ICA-Obn	Monoculture (Kenaf poles) Relay Association
7826	Systems of planting in Association: to compare hill plots with rows.	5 climbing vars.- contrasting types	Split plots. 3 reps.	0.5 ha	Oct-Jan	CIAT (O-N)	Association
7827	F ₂ BCMV/Rust nursery: Single plant selections	52 type IV crosses	-	0.75 ha	Oct-Jan	CIAT (O-2)	4 plants/m ² Monoculture (Kenaf poles)
7828	F ₂ Anthracnose nursery: Single plant selections	52 type IV crosses	-	0.75 ha	Oct-Jan	Popayán	4 plants/m ² Monocultures (Kenaf poles)
7829-30	F ₃ EP Climbers: preliminary Yield and Adaptation Trial	200 selections from 49 crosses	Hierachi- cal Crosses/ Selects.	0.6 Ha total	Oct-Jan	CIAT (O-2) Popayán	Monoculture (Kenaf poles)
7831-34	F ₄ EU Climbers: uniform yield and adaptation trial	47 selections	Lattice 7 x 7	1.2 ha. total	Oct-Mch	CIAT (O1) Popayán ICA-L.S. ICA-Obn	Association Association Relay Association
7835	Maize yield and adaptation trial for association in Popayán	15 maize genotypes	B.C.A. 3 reps.	0.1 ha.	Oct-Mch	Popayán	Monoculture
7836	Clean seed multiplication: for international testing	80 varieties	-	0.25 ha	Nov-Feb.	Dagua	Monoculture
7837	Microclimate comparison of maize - bean association v. monoculture	P364/suwan -1	-	1 ha.	Sep-Jan	CIAT S-2	Ann Clark thesis
7838	VEF F ₃ /F ₄ : disease and pest resistance nurseries (Rust/BCMV/Anthracnose/Angular Leaf spot/Emposca)	200 F ₃ selections 47 F ₄ selections	-	0.25 ha. total	Oct-Mch	CIAT 01s Popayán	F ₃ BCMV-screenhouse (Dr. Morales) Field nurseries (FS, AvS)

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beans

SECTION: Agronomy

SCIENTIST: Jeremy Davis

[illegible]

2B.2.4

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: Beans

SECTION: Agronomy

SCIENTIST: Oswaldo Voysest

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
	<u>YIELD TRIALS:</u> Advanced Yield Trial: Black	36 varieties: Best from previous Preliminary Yield Trials.	Lattice 5 x 5 3 reps.	2000m ² each site	6 months (2 sea- sons)	C-78B P-78B	These will be the last of these trials. Preliminary evaluation to be undertaken by Michael Thung.
	Advanced Yield Trial: Non-black	36 varieties: Best from previous Preliminary Yield Trials.	Lattice 5 x 5 3 reps.	2000m ² each site	6 months (2 sea- sons)	C-78B P-78B	
	International Yield and Adaptation Nursery - IBYAN-Black (25 vars.)	20 Standard / 5 Local checks Structure for 1978 Standard varieties -3 var. tested every year -2 var. from local checks of previous IBYAN's. -15 CIAT breeding lines	Lattice 5 x 5 3 reps.	1350 m ²	One yr. from April to March	(1 at CIAT) Around 100 trials/ year	Objectives fixed but basic structure developing through years according to the development of CIAT breeding program.
	International Yield and Adaptation Nursery - IBYAN-Non-black (25 vars.)						
	<u>SEED PRODUCTION</u> Clean seed production for IBYAN's	50 varieties	--	2 ha.	6 months (2 sea- sons)	Dagua	
	Clean seed production for Bean Team use	75 varieties per cycle	--	2 ha.	3 months	CIAT (Iote E)	
	<u>AGRONOMIC TRIALS</u> Weed control in narrow rows	°Vars: -Types I, II and III °Row spacing: 30,40,50,60 & 70 cm. and two combinations of double rows. °Plant population: 110,200,300.000 °Chemical control: - with and without further cultivation.	B.C.R. Split- plot 4 reps.	15000m ²	6 months (2 sea- sons).	C.78B	
	Mulches for weed control and moisture conservation.	°Type: -Rice hulls + sugarcane leaves °Herbicide application: with & without °Time of application: before emergence -Cotyledonary leaves stage	B.C.R. 4 reps.	1350m ²	3 months	C.78B	Further developments of these studies include different types of mulches.
	Frequency of irrigation	°Vars: -Types I, II and III °Frequencies of irrigation: every 5, 10, 15, 20 days.	B.C.R. 4 reps.	1350 m ²	3 months	C-78-B	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

2B.3.1

PROGRAM: BEANS

SECTION: PATHOLOGY - MYCOLOGY

SCIENTIST: HOWARD F. SCHWARTZ

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	1978 VEF - Bacteriosis Evaluate 1500 entries of VEF for their field resistance to common bacterial blight. Breeding progeny.	Inoculation with the common blight bacteria	1 rep 0.6 ha	Inoc. equip. humidity	Aug. 31 3 month	E1 CIAT	In collaboration with S.R. Temple
2	1978 IBBBN Evaluate 25 entries for bacterial blight reaction to different locations and isolates.	Inoculate with the common blight bacteria	RCB 3 rep 0.1 ha	"	Aug. 31 3 month	E1 CIAT	
3	1978 VEF - Rust Evaluate 1500 entries of VEF for their field reaction to bean rust.	Inoculate spreader rows with rust races and evaluate secondary infection of entries	1 rep 1.0 ha	"	Sept. 15 3 month	O1 South CIAT	
4	1978 VEF - Anthracnose/ Angular Leaf Spot Evaluate 1500 entries of VEF for their field reaction to anthracnose and angular leaf spot.	Inoculate all entries with anthracnose races and spreader rows with angular leaf spot	1 rep 1.0 ha	"	Sept. 28 4 month	Popayán	
5	1978 VEF - Ascochyta/ Gray Spot Evaluate 1500 entries of VEF for their field reaction to ascochyta and gray spot.	Inoculate all entries with ascochyta and spreader rows with gray spot	1 rep 1.0 ha	"	Sept. 28 4 month	Popayán	
6	Breeding Progeny Bush Beans - CIAT Evaluate progeny for resistance to bean rust.	Inoculate spreader rows with rust races and evaluate secondary infection of entries	1 rep 4.0 ha	"	Sept. 15 3 month	P3, O1 CIAT	In collaboration with S.R. Temple
7	Breeding Progeny Bush Beans - Popayán Evaluate progeny for resistance to anthracnose, angular leaf spot, etc.	Inoculate with anthracnose and angular leaf spot	1 rep 3.0 ha	"	Oct. 1 4 month	Popayán	In collaboration with S.P. Singh
8	Breeding Progeny Climbing Beans - CIAT Evaluate progeny for resistance to rust.	Inoculate spreader rows with rust races and evaluate secondary infection of entries	1 rep. 1.5 ha	"	Oct. 10 3 month	O1 North CIAT	In collaboration with J. Davis
9	Breeding Progeny Climbing Beans - Popayán Evaluate progeny for resistance to anthracnose, angular leaf spot, etc.	Inoculate with anthracnose and angular leaf spot	1 rep. 1.5 ha	"	Oct. 10 4 month	Popayán	In collaboration with J. Davis
10	Effect of Bean Monoculture/ Maiz Association upon Rust Infection.	Inoculate a bush and climbing variety planted in monoculture and association	RCB 3 rep		Oct. 15 3 month	O1 CIAT	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENT

2B.3.2.

PROGRAM: BEANS

SECTION: PLANT PATHOLOGY

SCIENTIST: F. J. MORALES

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	EP	277 EP77 and EP78	1 rep. 15 seeds each		June	GH	Manual inoculation and evaluation of 4,155 plants
2	IBYAN	44 entries	1 rep. 25 seeds each		July	GH	1,100 plants
3	Climbing beans	300 F ₃ families	1 rep. 15 seeds each		July	GH	4,500 plants
4	Empoasca	158 families	1 rep. 10 seeds each		July	GH	1,580 plants
5	F ₃	991 F ₃ families	1 rep. 20 seeds each	3,500m ²	July- Sept.	S ₁	19,820 plants
6	EP	75 selections	3 rept. 20 seeds each		Sept.	GH	1,500 plants
7	F ₂	127 F ₂ populations	1 rep. 200 seeds each	2,900m ²	Sept.- Nov.	P ₃	25,400 plants
8	F ₂ - F ₃	2.753 F ₃ , F ₄ families	1 rep. 20 seeds each	10,000m ²	Sept.- Nov.	P ₃	55,060 plants
9	ICA	6 crosses from ICA	1 rep. 20 seeds each		Sept.- Nov.	GH	120 plants
10	VEF	1.500 entries	1 rep. 20 seeds each	3,700m ²	Oct.- Dec.	O ₁	30,000 plants
11	Climbing beans	52 crosses	1 rep	7,500m ²	Oct.- Dec.	O ₂	18,475 plants

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

2B.3.3

PROGRAM: BEANS

SECTION: ENTOMOLOGY

SCIENTIST: SCHOONHOVEN/CARDONA

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Comparison of effectivity of granulated systemic insecticides for leafhopper control.	12 products, 1kg 1A/ha	RB 3 reps	1200 m ²	Dec	D ₁	
2	Cultural control of leafhoppers 1: effect of residual maiz as soilcover on leafhopper.	2 varieties. 5 treat. (1 resistant, 1 suscept.)	RB 4 reps	1500 m ²	Dec	D ₂	
3	Cultural control of leafhoppers 2: of straw and other soil covers on leafhopper.	2 varieties. 5 treat.	RB 4 reps	1500 m ²	Dec	D ₂	
4	Cultural control of leafhoppers 3: effect of various graminaceous weeds on leafhoppers in beans (Leptochloa and Eleusine).	2 varieties factorial with 12 treatments	Factorial 4 reps	2500 m ²	Dec	D ₂	
5	<u>Empoasca</u> resistance: Climbing beans	300 F ₃ families	15 seeds 1 rep	500 m ²	Dec	D ₂	
6	International golden mosaic nursery and rust resistant nursery.	250 entries, 60 entries	40 seeds 2 reps	1500 m ²	Dec	D ₂	
7	Elite <u>Empoasca</u> resistant materials (resistance confirmation)	180 entries	RB 40 seeds 2 reps	1000 m ²	Dec	D ₂	All <u>Empoasca</u> resistance nurseries are separated in blacks and non-blacks
8	Non-P. <u>vulgaris</u> materials. 10 P. <u>scutifolius</u> . 250 P. <u>lunatus</u> . Unknown additional ones.		1 rep	1 ha	Dec	D ₂	
9	Breeding nurseries: Breeding VEF, Breeding EP	780 and 768 entries, respectively	2 reps 1 rep	2000 m ²	Dec	D ₂	
10	Determination of critical population levels of <u>Empoasca</u> . Confirmation of results.	4 treatments	4 reps	800 m ²	Dec	D ₁	
11	Evaluation of effectiveness of <u>Anagrus</u> as an egg-parasite of <u>Empoasca</u> .	16 treatments	3 reps	1500 m ²	June to continue	D ₂	

REGISTER OF

2B.4.1

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

Semester B 1978

PROGRAM: Beans

SECTION: Physiology

SCIENTIST: Dr. Douglas R. Laing

On going program

Number	TITLE : PURPOSE	TREATMENTS	Design/ REPS	Require- ments	Date/ Dura- tion	Loca- tion	REMARKS
7822	Temperature adaptation series Manizales (2,400 m)	250 varieties promisories	RSB (3)	6000 m ²	Oct. 15 100 d.	Univer- sity farm Manizales	Prob. one experiment only
7819	Temperature adaptation series (CIAT 1001 m)	250 varieties promisories	RSB (3)	6000 m ²	Sep 27 85 days	M ₂ N	Continuing experiment
7823	Temperature adaptation series (Patfa 615 m)	250 varieties promisories	RSB (3)	6000 m ²	Sep 30 80 days	Private farm Patfa	Ist. Attempt in this location
7824	Photoperiod screening	650 adv. lines and parents (18 h and 12 h)	RB (2)	3200 m ²	Oct. 1 st 120 days	OIS	Continuing experiment 2 / year.
7825	Water stress screening	250 adv. lines and parents (wet and dry)	RSB (3)	5000 m ²	Dec. 1 st 90 days	M3N	Dry season sowing

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

Semester B 1978

PROGRAM: Beans

SECTION: Physiology

SCIENTIST: Douglas R. Laing

Limited Time Frame

Number	TITLE : PURPOSE	TREATMENTS	Design/ REPS	Require- ments	Date/ Dura- tion	Loca- tion	REMARKS
7820	Comparison of growth and development in type I and II 40 materials (PhD Thesis Jeff White)	40 varieties	RSB** (4)	5000 m ²	Sep. 30 75 days	M 2 S	Final experiment of J White
7821	Competition in maize-bean asociation (types II and IV), PhD Thesis A. Clark.	Maize monoculture Maize beans II asociation Maize bean IV asociation Bean monoculture	SED *	1-2 ha	Sep 30 120 d.	S 2 N	Final experiment of A. Clark collaboration with J. Davis
7826	Stability of growth habit; development of screening method	Red light treatments	SED * (1)	500 m ²	Sep 25 80 days	O M S	Continuing develop. work prior to visit of Dr. Kret- schmer of Cornell for 6 months
	* Systematic experimental design ** Randomised split block						

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

2B.4.2

PROGRAM: BEANS

SECTION: Physiology

SCIENTIST: P. G. Jones

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	SAMMDATA (South and Central American Mean Meteorological data) System testing			Compu- ter Analysis	Oct.		All maintenance routines complete and tested-This is full system acceptance test with data
2	Development of automatic fortran translator program			"	Oct.		Machine translation for CDC fortran to IBM
3	Translation of INFOL to IBM fortran using machine translation			"	Oct-Nov		
4	Final, by hand translation - debugging and testing of INFOL.			"	Jan-Feb 1979		
5	Collating and coding meteorological data			"	Inde- finite		
6	Phenology predictor development IBYANS 1976			"	Nov.		Initial development - choosing optimum model
7	Phenology prediction - IBYANS 1977 cleaning and transposing data			"	Dec-Jan		
8	Extension of models to IBYANS 1977 varieties			"	Dec-Jan		
9	Reclassification of responses			"	Dec-Jan		Possible extension to all materials based on CIAT screenings
10	Development of subsidiary meteorological soft ware			"	Unknown		

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

2B.4.3

PROGRAM: FRIJOL

SECTION: MICROBIOLOGIA

SCIENTIST: PETER H. GRAHAM

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
006-78	Comparison of single vs multistrain Inoculants for beans.	3 single strains 1 multiple strain Inoculants	R.B. 5	1350	3 months	Popay.	
010-78	Relative planting date effects on nitrogen fixation in maize-bush bean association	4 planting dates Monoculture and Associated beans, maize	R.B. 4	2250	4 "	"	
014-78	Strain testing under field conditions.	20 strains, data on nodulation; CHO, yield	R.B. 5	1350	4 "	"	
015-78	Influence of N-fertilisation on profiles of N ₂ fixation in 4 cultivars of <u>P. vulgaris</u>	Inoculation + 0-100 Kg. urea/ha.	4	2800	4 "	"	
016-78	Comparative study of N ₂ fixation in <u>P. vulgaris</u> <u>acutifolius</u> , <u>coccineus</u> , <u>lunatus</u>	9 cultivars x weekly sampling	R.B. 5	1800	4 "	"	
017-78	Study of seed treatments (fungicides, insecti- cides) on nodulation under field condition	5 pesticides x 4 Inoculant - Methods	R.B. 5	900	4 "	"	
018-78	Influence of N source -(gallinasa KNO ₃ urea) on nodulation and fixation	4 sources x 3 varie- ties	R.B. 5	2000	4 "	"	
003-78	Evaluation of nitrogen gains from fixation at the small farmer level	15 farms x 3 treat- ments	1	--	4 "		CARMEN DE VIBO- RAL & LABORATORY
004-78	Evaluation of nitrogen fixation in beans under cold climate conditions.	5 varieties x 10 sampling times	4	2000	6 "	OBONUCO	
-----	STRAIN EVALUATION	N 300 Strains	5	--	CONTINUOUS	LABORATORIO -	
-----	BREEDING FOR ENHANCED FIXATION	CONTINUING PROJECT			CONTROLLED TEMP. ROOM		

REGISTER OF CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

October, 1978

2B.5.1

PROGRAM: BEAN ECONOMICS

SECTION: ACTIVITIES FOR 1978

SCIENTIST: JOHN H. SANDERS

[illegible]

3. CASSAVA PROGRAM REGISTRY

1978

CASSAVA PROGRAM SUMMARY

Based on preliminary replies: 142 separate activities/experiments.

I. Sectional Resources - as an estimated percent of resources and reports:

A. Major Activities

1. Research	72%
2. Training	17
3. Consultation/Outreach	11

B. Research Strategies

1. Identification of constraints	13
2. Development of research methodology	9
3. Direct problem solving activities	78
4. Other	

C. Location of Experiments

1. Field	83
2. Laboratory	11
3. Greenhouse/Growth chamber	6

D. Land Used (Experiment Stations) - from registers:

<u>Location</u>	<u>Area</u>	<u>Percent</u>
Palmira	44.7 ha	46
Quilichao	6.0 ha	6
Carimagua	16.8 ha	17
Caribia/Media Luna	6.9 ha	7
Other	23.1 ha	24
	97.5 ha	

Other sites: Popayán, Ciénaga, Santa Marta, Caicedonia, Porvenir, Nataima, San Juan, Pereira; Colombia.
 International trials: Venezuela, Argentina, México, Ecuador, Dominican Republic, Costa Rica, Honduras.

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: CASSAVA

SECTION: CULTURAL PRACTICES

SCIENTIST: ABELARDO CASTRO

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1/78	Variety x Fertilizer x Density: 5 years term trial. 3rd cycle in the field. Effect on yield and soil fertility	3 varieties x 2 fertility levels x 4 planting densities	(1)/4	0.5ha @	76/81 5 yrs	CIAT Caribia	(1) Random blocks ne within va
2/78	Spacial distribution x planting density and yield effect on three varieties	10-15.000 pl/ha square/rectangular planting-3 varieties	(2) /4	0.3ha	76/78 2 yrs	CIAT	Split-spl design wi units in
3/78	Origin of stake (age) and effect on yield	Stakes from: upper, middle, lower portion of plant	RB/4	0.25ha	76/78 2 yrs	CIAT	
4/78	Date of planting x Age of harvest	6 planting dates (every 2 months) x 6 harvesting ages per planting date	(4) /4	1.8ha @	77/79 2 yrs	Caribia Carimagua.	Split b design
7/78	Replanting/transplanting/direct planting and yield effect.	Direct planting-transplanting from soil/plastic bags-replanting with stakes.	CRB /4	0.3ha	78/79 1 yr.	CIAT	
11/78	Trapezoidal sistematic design for planting density studies	12 planting densi-ties between 5 and 20.000 pl/ha	Trapeze /4	0.12ha	77/79 2yrs	CIAT Caribia Carimagua Quilichao Media Luna	
12/78	CIAT vs. local planting s. tems with local and introduced variety	Local planting system Stake selection, Treatment ss, tr. + density, introduced variety	RB /4	0.4ha	78/79 1 yr.	Media Luna	

REGISTER OF CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: YUCA

Number	TITLE; PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
CP1	Intensive intercropping system for cassava	Cassava monoculture Cassava+bushbeans Cassava + Bushbeans+ Climbing beans Cassava + Climbing beans Bushbeans monoculture Subtreatment for climbing beans: Cassava defoliated- not defoliated CV: MMEX 11	RCB 4	0.18ha	8-24-77 IX/78	CIAT-P Q1 Sur	
CP2	Crop-weed interaction in cassava monoculture and a cassava-bushbean association.	Main: Cassava mono- culture Cassava-bean asso- ciation Subtr: No Weed control Preemergent only Pre + one hand weeding Frequent hand weeding CV: MMEX 11	SB* 4	0.25ha	X-18-77 X/1978	CIAT-P Q1 Sur	
CP3	Effect of daylength on 20 cassava cvs	Range of daylength: 12 h natural duration; to 18 h with artificial illumination	Syste- matic 2	0.3ha	IX-26/77 8/78	CIAT-P P2 Norte	Cooperative study with cassava physio- logy, conducted by trainee Watana Watananonta. Preliminary research in order to identify 4 CVS. to be tested at a range of lati- tudes.
	* SB = Strip block design						

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENT

PROGRAM: YUCA

SECTION: PRACTICAS CULTURALES

SCIENTIST: DR. DIETRICH E. LEIHNER

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
CP4	New herbicides in cassava. Observation of control of weeds through time, phytotoxicity, effect on yield	H1 to H9 CV: CMC 40 New herbicides, C1 = Weedy check C2 = Weed free check C3 = Karmex-Lazo Dosis: D1 = Commercial D2 = 2 x comm. D3 = 4 x comm. Main plots (strips) = Dosis subplots = products + controls	SB 3	0.26ha	12-15/77 Nov/78	CIAT-P Q1 Sur	
CP5	Effect of promising new herbicide "Oxifluorfen" on weeds, cassava growth and yield, using normal and low dosages.	Oxifluorfen: CV: C.C40 2 x comm. rate 1 x comm. rate 1/2 x comm. rate 1/4 x comm. rate Controls: Weedy check weedfree check Karmex + Lazo	RCB 4	0.20ha	3-31/78 2-1979		Trial conducted by trainee Yoshiaki Karo
CP6	Development of storage techniques for cassava planting material. Influence of storage period and mode of storage on cassava germination and yield.	Main: CV: CMC 76 Period of storage 0-1-2-3 months Sub: Mode of storage 1) Fresh material no storage 2) Dry room, shade 1 m bar 3) Subterranean storage 1m bar 4) Subterranean storage 20 cm stake 5) In field, shade, plastic cover, 1m bar 6) In field, shade	SP 4	0.33ha	7-11-78 6/1979	CIAT-P Q1 Sur	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: YUCA

SECTION: PRACTICAS CULTURALES

SCIENTIST: DR. DIETRICH E. LEIHNER

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
CQ1	Influence of plant population and planting system on mechanical harvest properties of cassava.	Main: Flat-ridge-bed planting Sub: 5-10-15-20 x 10 ³ plants per ha CV: Chiroza Gallinaza	semi-commercial sized single plots without reps	0.6ha	X-4-77 IX-1978	CIAT-Q	
CQ2	Influence of variety and plant population on mechanical harvesting properties of cassava	Main: Varieties MMEX-11, MCOL-22, CMC-84, Sub: 5-10-20 x 10 ³ plants/ha	semi-commercial sized single plots without reps	0.3ha	9-26/77 9/1978	CIAT-Q	
CC1	Intercropping cassava with cowpea, mungbean and peanut	Main: Planting system flat-ridged Sub: Crops 1 cy each of cowpea, mungbean, peanut Sub-Sub: Cassava monocult. Cassava-legume legume monocult. Cassava CV: MCOL 22	Systematic 2	0.20ha	5-30-77 Harvest of le- gumes: 9-1978 harvest of cassava 4-1979	Exp. Station CARIBIA (ICA)	

PROGRAM: YUCA

SECTION: PRACTICAS CULTURALES

SCIENTIST: DR. DIETRICH E. LEHNER

[illegible]

3.1.3

SECTION: CULTURAL PRACTICES

SCIENTIST: Drs. D. Leihner/B. Hegewald

[illegible]

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

3.1.4

PROGRAM: CASSAVA

SECTION: SOILS

SCIENTIST: REINHARDT, H. HOWLER

under	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
77- 4	Covercrops for erosion control in cassava	7 legumes } as cover 1 graminea } crop	RCR	1/4 ha	VII-77 VII-78	Carim. Agron.	
77- 8	Efficiency of P absorption of cassava compared with other crops.	11 P levels(0-500 P ₂ O ₅) x 8 crops	System	1/2 ha	VII-77 VII-78	Carim. Reserva	
77- 1	P x lime	17 P levels (0-480 P ₂ O ₅) x 17 lime levels (0-4.8 ton)	System	1/4 ha	XI-77 XI-78	Carim. Agron.	
77-9	External P requirement of cassava	9 P levels (0-2040 P ₂ O ₅)	RCR	1/4 ha	XI-77 XI-78	Carim. Agron.	
77-3	Method x level (3) x source (3) of P application	10 methods(bands-broad- cast) x 3 levels (100- 200-400)x3 P sources	System	1/4 ha	XI-77 XI-78	Carim. Agron.	
77-10	Maximum yield trial: Determine yield under most optimal condition in Carimagua	2 most promising vari- eties x 2 levels of irrigation	Split plot	1/4 ha	IX-77 IX-78	Carim. Agron.	
77-11	Use of mulch for humidity conservation	8 mulch treatments	RCR	1/4 ha	XI-77 XI-78	Carim. Agron.	
	Residual effect of 8 rock phosphate sources	8 P levels x 8 R.P. SOURCES	Split Plot	1/2 ha	X-75 -1978	Carim. Tabaquero	With P project
78-1	Nitrogen-sources x time of application	5 N sources x 3 times of application	RCR	1/4 ha	V-78 V-79	Carim. Yopare	
78- 2	Fertilization of Mg	3 sources x 3 methods x 3 levels of applica- tion	RCR	1/4 ha	V-78 V-79	Carim. Yopare	
78- 3	Interaction of Ca and Mg	Combinations of Ca and Mg in various prop.	RCR	1/4 ha	V-78 V-79	Carim. Yopare	
78- 4	Fertilization of K: levels x time of application	4 levels (0-50-100- 200) x 5 times of app.	RCR	1/4 ha	V-78 V-79	Carim. Yopare	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

.../2

PROGRAM: _____

SECTION: _____

SCIENTIST: _____

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
78-5	Efficiency of P absorption of cassava compared with other crops	12 P levels (0-600 P_2O_5) x 5 crops	System	1/2 ha	VI-78 VI-79	Carim. Reserva	Partial repetition of 77-8
78-6A	Method of fertilizer application	16 different methods, of time and location of application	RCB	1/4 ha	V-78 V-79	Carim. Yopare	
78-6B	Same	Same	Same	Same	IX-78 IX-79	Carim. Yopare	
78-8	Screening for tolerance to high Al and low P	2000 varieties at 3 treatments of lime x x P.	Split plot	2 ha	IX-78 V-79	Carim. Yopare	
77-6	Methods x sources x levels of P	10 methods x 3 sources x 3 levels	System	1/4 ha	XII-77 XII-78	Quilic. Lago	
77-7	Long-term effect of cassava on soil fertility	N(3): 0-100-200 N P(3): 0-200-400 P_2O_5 K(3): 0-150-300 K_2O	Fact.	1 ha.	XI-77 XI-78	Quilic. Lago	
78-12	Screening of 30 varieties for acid-soil tolerance	30 var. x 4 lime (0, 1/2, 2, 6)	Split Plot	1/2 ha	IV-78 IV-79	Quili. Lago	
78-13	Screening of 20 varieties for high Al and low P	20 varieties at 3 treatments of lime x P	Split plot	1/4 ha	IV-78 IV-79	Quili. Lago	
78-14	Absorption and distribution of nutrients	2 var. x 2 fert. treatments harvest and analysis monthly	Split plot	1/4 ha	III-78 " 79	Quilic. Sinai	
78-15	Method and source of P application.	9 P sources applied by various methods and times.	RCB	1/4 ha	III-78 III-79	Quilic. Sinai	Long-term (3-4 year)
	P sources and level of application.	3 levels x 5 P sources	RCB	1/4 ha	III-78 III-79	Quilic. Sinai	With P project Long-term (4-5 year)
78-16	Effect of stake nutrition on yield	stakes from previous NPK trials + stake	RCB	1/4 ha	XI-78 XI-79	Quilic. Sinai	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENT

.../3

PROGRAM: _____

SECTION: _____

SCIENTIST: _____

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
78 - 17	Mg-fertilization: levels x sources x methods application	3 levels x 4 sources x 3 methods applic.	RCB	1/4 ha	VIII-78 Quil. VIII-78 Sinal		
78 - 18	Fertilization of S, Zn, Cu, and B.	4 levels x 4 elements	Split plot	1/4 ha	VIII-78 Quil. VIII-78 Sinal		
78 - 19	External P requirement of cassava	11 levels (0-2600 P_2O_5)	RCB	0.3 ha	VII-78 Quil. VII-78 Lago		Replanting of 77-1
78-20	Stake treatment: effect on germination	24 stake treatments of various nutrients	RCB	0.05ha	IV-78 VI-78	CIAT R-3	
78-21	Fertilization of Zn: levels x sources x methods	2 levels x 3 sources x 5 methods	RCB	1/4 ha	VI-78 VI-78	CIAT Q-4	
78-22	Use of mulch for humidity conservation	9 mulch treatments	RCB	1/4 ha	VI-78 VI-78	CIAT Q-4	
78-23	Method of replacing non-germinated stakes Seed increase of MCol 1684	12 methods of stake replacement	RCB	1/4 ha	V-78 V-78	CIAT	
	Seed increase of Llanera and MCol 638			1 ha	VI-77 XII-78	CIAT T-1	
	Screening varieties for high Al and low P in nutrient solution	3 Al x P treatments		pots 2 bench	cont	Green house	
	Mg-fertilization in Quilichao-soil	3 sources x 3 levels x 3 methods		pots 1 bench	IV-78 VI-78	Screen house	
	K fertilization in Quilichao-soil	4 levels x 3 sources		pots 1 bench	IV-78 VI-78	Screen house	
	Mg x K interaction in Quilichao soil	4 x 4 levels of Mg and K		pots	IV-78 VI-78	Screen house	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

.../4

PROGRAM: _____

SECTION: _____

SCIENTIST: _____

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
	Ca x Mg interaction in Quilichao-soil	4 x 3 levels of Ca and Mg		pots 1 bench	IV-78 VI-78	Screen house	
78-I-9	Fertilization of B, Mn, K, in CIAT-soil	4 levels x 3 elements		pots 2 bench	VI-78 IX-78	Screen house	50,000 contoured hybridization
78-I-2	Efficiency of P absorption and utilization	4 tolerant + 4 non- tolerant varieties in nutrient sol. and soil		pots 4 bench	VII-78 X-78	Green house	
							20,000 F hybrid plants
							2,000 lines
							400 lines

PROGRAM: CASSAVA

SECTION: BREEDING

SCIENTIST: K. KAWANO-Y. UMEMURA.

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
	F ₁ hybrid seedling (plant evaluation).			2.0 ha	May 78 12 mo.	Carimagua	20,000 plants
	Single-row trial (observational yield trial)			1.0 ha	Oct 77 10 mo.	"	2,000 lines
	" "			1.0 ha	May 78 10 mo.	"	
	Replicated yield trial		2	1.0 ha	Oct 77 12 mo.	"	120 lines
	"		2	1.0 ha	May 78 12 mo.	"	
	Replicated yield trial		2	1.0 ha	Oct 77 11 mo.	Caribia	90 lines
			4	1.0 ha	May 78 11 mo.	"	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

3.3.2

PROGRAM: YUCA

SECTION: ENTOMOLOGIA

SCIENTIST: JESUS A. REYES Q.

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Control Biológico del cachón de la yuca <u>Erinnyis ello</u> (L)	<u>Apanteles</u> sp., <u>Trichogramma</u> sp. <u>Podisus</u> sp. <u>Zellus</u> sp	RCB/4	Lab. Lo- te Pl Jaulas	III/78 III/79	CIAT P.	Colaborador: Bernardo Arias
2	Estudios complementarios sobre <u>Trichogramma</u> sp. parásito de posturas de <u>Erinnyis ello</u> (L)	Edad de posturas y épocas de liberación Fec. <u>B. Thuringiensis</u>	RCB/4	Lab. Cam- pos sem- brados	III/78 III/79	P. Q. C.	Colaborador: Bernardo Arias
3	Insectos enemigos de <u>Oxysarcodexia</u> sp.	<u>Brachymeria</u> , <u>Pachyneurón</u>	RCB/4	Labora- torio	III/78 III/79	P. Q. C.	Colaborador: Carlos Martin
4	Estudio sobre <u>Oligota minuta</u> (predador de ácaros).	<u>Mononychellus tanajoa</u> épocas, lluvias	RCB/4	Campos sembrados	III/78 III/79	P.	Colaborador: José María Guerrero
5	Estudios complementarios sobre <u>Anastrepha</u> sp.	Epocas, hospedantes, Atrayentes.	RCB/4	Campos sembrados	III/78 XI/78	Caice- donia	Colaborador: Octavio Vargas
6	Cría masal de la escama blanca <u>Aonidomytilus albus</u> .	M col 22 - M col 113 Parafina - fungicidas	SP/4	Labora- torio	III/78 VIII/78	P.	Colaborador: Bernardo Arias
7	Tratamiento de estacas para control de Termitas (Comején)	Aldrín, Aldrex, Clorvel, Furadán, Orthocide, Di- thane-Bavistín-manzate	RCB/4	Lote 3000Mt ²	IV/78 IV/79	Costa Atlan- tica	Colaborador: Bernardo Arias
8	Fluctuación de poblaciones de Termitas (comején).	Diferentes épocas de lectura	RCB/4	Lote 1500Mt ²	IV/78 IV/79	Costa Atlan- tica	Colaborador: Bernardo Arias
9	Biología, ecología, cría masal y control Bioló- gico de <u>Phenacoccus gossypii</u> .	Diferentes variedades	RCB/4	Inverna- dero Lab.	IV/78 XII/79	P.	Colaboradores: Ana Milena Varela y Octavio Vargas
10	Trabajos complementarios sobre <u>Polistes erythrocephalus</u> .	Larvas <u>Erinnyis</u> <u>Baci- llus thuringiensis</u>	SP/4	Lote Pl Lab. Jaulas	III/78 XI/79	P. Q. C.	Colaborador: Carlos Martin
11	Identificación de variedades de yuca con resis- tencia amplia a los ecosistemas de Carimagua y Media Luna.	Ecosistemas diferentes	RCB/4	Lotes 7000Mt ²	VI/78 VI/79	C. Medio Luna	Proyecto en coop. con Fitopatología yuca (Dr. Carlos Azano)
12	Control de Termitas y Hormigas en Carimagua	Aldrín, Furadán, Mirex, Cotton Dust.	RCB/4	Lote 5000Mt ²	IV/78 XII/78	C.	Proyecto en coop. con Ent. Ganado de Carne (Dr. Mario Calderón)

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: YUCA

SECTION: ENTOMOLOGIA

SCIENTIST: OCTAVIO VARGAS H.

Number	TITLE: PURPOSE	TREATMENTS	Design/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Estudios de resistencia a ácaros	Resist X Resist Resist X Suscept. Suscept X Suscept.	RCB/4	1/2 Ha	XI/77 4 años	P. CIAT	Colaboradores: David Byrne y José María Guerrero
2	Posible efecto acumulativo de insecticidas clorados en las raíces de yuca	Var: CMC 40 Insect.: Aldrin 2.5% Toxapheno 60%	RCB/4	1/4 Ha	VI/78 6 mo.	P. CIAT	Colaboradores: I.I.T. Bogotá * y Jesus A. Reyes
3	Ciclo biológico de <u>Lasioderma serricorne</u> (F) en yuca seca	Var.: CMC 84	RCB/4		IV/78 6 mo.	Lab. CIAT	
4	Evaluación del daño causado por <u>L. serricorne</u> en yuca seca almacenada	Híbrido.: CM 391 - 11 CM 507 - 17	SP/4		VI/78 6 mo.	Lab. CIAT	
5	Reducción del área fotosintética debido al ataque de mosca blanca (<u>Aleurotrachelus</u> sp.)	Var.: CMC 40	RCB/4	20 m ²	VII/78 3 mo.	Porve- nir	Colaboradores: James H. Cock y Sara Mejía
6	Evaluación de resistencia de 200 variedades a mosca blanca (<u>Aleurotrachelus</u> sp)	200 variedades	RCB/4		V/78 1 año	ICA Natai- ma(Tol)	Colaborador ICA - Nataima (Tol.)
7	Evaluación del Banco de Germoplasma en busca de resistencia al chinche de encaje <u>Vatiga manihotae</u>	2400 variedades	-		VII/78 3 mo.	CIAT	
8	Estudio del daño económico causado por <u>Aleurotrachelus</u> sp.	Var.: CMC 40 MEX 59 CMC 57	SP/4	1/2 Ha.	X/78 1 año	ICA Natai- ma	Colaborador: ICA - Nataima (Tol.)
9	Evaluación del Banco de Germoplasma en busca de resistencia al piojo harinoso <u>Phenacoccus gossypii</u>	2400 variedades			VII/78 3 mo.	CIAT	Colaborador: Ana Milena Varela
10	Evaluación del banco de germoplasma en busca de resistencia a la escama blanca <u>Aonidomytilus albus</u>	2400 variedades			VII/78 3 mo.	CIAT	Colaboradores: Jesús Antonio Reyes Bernardo Arias
11	Incidencia de insectos plagas en el cultivo asociado de yuca-frijol yuca en monocultivos	Var.: M MEX X 11 Porrillosinté- tico.	SP/4	1/4 Ha.	VII/78 2 años	CIAT	Colaborador: Michael Thung
	* Instituto de Investigaciones Tecnológicas Bogotá						

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: YUCA

SECTION: ENTOMOLOGIA

SCIENTIST: DAVID BYRNE

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Field evaluation in cassava varieties for mite resistance to identify var. which are resistant	Varieties	RCB 2-4	varies with # var.	various dates 9 mo.	CIAT S. Juan	
2	Greenhouse evaluations of varieties for mite resistance - to identify varieties which are resistant - to eval. the evaluation technique.	Varieties - different soils-pot sizes	CRD 2-4 rpl.	Green- house	various dates 3 mo.	CIAT	
3	Studies of mite resistant and mite susceptible varieties of cassava	Varieties infested & protected	SP 4 rpl.	3000-2 6000m ²	various 9 mo.	CIAT S. Juan M'Luna	* To be planted in September
4	Mite resistance and plant age	Varieties plant age	CRD 4 rpl.	2000m ²	15 mo. III/78	CIAT	
5	Tests of miticides	Miticides	CRD 4 rpl.	Heavily infest. field	1 mo.	S. Juan del C.	
6	Characterization of mite resistance to see how the biology of the mite changes on resistant vs. susceptible varieties	Varieties, age of mite source of mite	CRD 5-20 rpl.	Growth chamber	various 3 mo.	CIAT	
7	Study on the inheritance of thrips resistance	Genotypes - crosses	RCB 3 rpl.	4000m ²	XI-14 1977 12 mo.	CIAT	
8	Study on the inheritance of mite resistance	Genotypes - crosses	RCB 3 rpl.	3000m ²	IV-28 1977 12 mo.	CIAT	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: YUCA

SECTION: ENTOMOLOGY

SCIENTIST: BERNHARD LOHR

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Evaluations of the biology of <u>Chilozela bifilalis</u>			Binoc- ulars	VIII/78 6 mo.	C. CIAT	
2	Determination of the fluctuation of population	Capture - recapture estimation of attack		Traps Cages	IX/78 2 mo.	C.	
3	Determination of the time of highest activity	Capture and evaluation in short intervals		Traps	VII/78 2 mo.	C.	
4	Identification and determination of the effect of egg larval and pupal parasites			Cages Micr. Binoc.	II/79 3 mo.	C.	
5	Host plant range of <u>Chilozela bifilalis</u>	Feeding exp. collecting of <u>Euphorbiaceae</u> and other plants.		Insect rearing fac.	II/79 4 mo.	C.	
6	Determination of yield losses due to stemborers	Various varieties	SP/4		V/79 9 mo.	C.	
7	Screening for tolerance and resistance	Insecticides parasites and predators	CRB/4		II/79 6 mo.	C.	
8	Development of control methode				VI/79 4 mo.	CIAT	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

3.4.1

PROGRAM: YUCA

SECTION: FISIOLOGIA

SCIENTIST: J.H. COCK

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
	Physiological basis of fertilizer response	Zero, medium, high levels on N,P, K in factorial design.	4 RCB	Pots	3 months	CIAT	
	Physiological basis of different fertilizer response with vigorous, medium and non-vigorous varieties.	Zero, medium, high levels of fertility. Var M Mex 59, CMC 40, MCol 22.	3 RCB	0.4 ha.	12 mo.	Santan- der.	
	Effects of water stress on cassava growth. Stress periods 4-8, 8-12 months.	Stress 4-8, 8-12 months. Var. M Col 22.	4 RCB	0.5 ha	12 mo.	CIAT Q2 N	
	Relation between photosynthetic rate, leaf life and yield using varieties of very similar phenotype.	M Pan 114, M PtR 26, M Ven 218, M Mex 17, M Mex 11, M Ven 77, M Pan 70.	5 RCB	0.5 ha	12 mo.	CIAT Q2 N	
	Relation between crop growth rate and LAI of different varieties and its relation to photosynthesis measured in the lab.	Different densities and 10 varieties.	3 RCB	0.4 ha.	3 1/2 mo.	CIAT Pls.	
	Photosynthesis of different clones	Varieties various	10 reps. Random	Lab.	Conti- nuous	CIAT	
	Response of 50 varieties to water stress	50 varieties water stress.	2 reps. RCB	0.2 ha	8 mo.	Santan- der.	

3.5.1

SCIENTIST: J.K. LYNAM

[illegible]

CURRENT RESEARCH ACTIVITIES/EXPERIMENT

PROGRAM: YUCA

SECTION: ECONOMIASCIENTIST: JOHN LYNAM-----[illegible]

4. ASSOCIATED RESEARCH UNITS REGISTRY

1978

ASSOCIATED RESEARCH UNITS SUMMARY

1. Based on eight registers and 80 activities/experiments.

<u>Unit</u>	<u>Registers</u>	<u>Scientist</u>	<u>Activities</u>	
Rice	Agronomy/training	JGF	13	
	Breeding	HW	16	
	Network testing	MR	<u>17</u>	46
Swine	Nutrition/Outreach	GGG/JBA	6	6
Genetic Resources	Plant Biochemistry	RAL	6	
	Germplasm Specialist	LPS	8	
	Tissue Physiologist	WMR	<u>6</u>	20
Andean Maize	Plant Improvement	GG/JB	8	8
Total =		<u>8</u>		80

2. Area Utilized:

		<u>Hectares</u>	<u>Other</u>
Rice:	Agronomy	7.0	-
	Breeding	13.3	Greenhouse
	Network testing	4.8	
Swine:	Nutrition/training	4.0	(153 pigs) (60 rats)
GRU:	Germplasm Maintenance	3.7	-
	Biochemistry/physiology	-	Laboratory
Maize:		3-4	

SCIENTIST: JOAQUIN GONZALEZ

[illegible]

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: ARROZ

SECTION: AGRONOMIA Y ADIESTRAMIENTO

SCIEN ST: JOAQUIN GONZALEZ

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
2	Distancias y densidades de siembra en arroz transplan- tado (CICA 8).	20x20 cm-2, 4, 6 plantas	RCB	Suelo	4-13-78	P	Para agronomía y adies- tramiento. Observación en
Corto	Después de la cosecha comparar altura de corte en soca	30x30 cm-2, 4, 6 plantas 40x40 cm-2, 4, 6 plantas	3	1 Ha.	10 meses	G.3	población de malezas.
	Se cosechó a partir IX-22-78 Continua con altura de corte						
3	Densidades de siembra en semilla pregerminada de arroz (CICA 8)	50, 80, 110, 140 kg de se- milla por hectárea	RCB	Suelo	6-6-78	P	Para adiestramiento. Agro- nomía observa control de
Corto			3	1 Ha.	10 meses	G.3	malezas y producción.
4	Competencia de las malezas con arroz	Deshierbas desde los 0, 10, 20, 30, 40, 50, 60, 70, 80, 90 y 100 días después	RCB	Suelo	6-1-78	P	Para agronomía coopera- ción con audiotutoriales.
Corto		de siembra. Control con herbicida Propanil y des- hierbe a los 30, 60 y 90 días	3	1/9 Ha.	10 meses	G.3	
5	Control de malezas en arrozales con herbicidas post transplante	Goal 1G: 0, 25-0, 50- 0, 25+0, 25 Propanil: 1, 36 - 2, 72	RCB	Suelo	5-3-78	P	Para agronomía Adiestramiento
Corto		2, 4, 5-T: 0, 22 - 0, 43 Testigos	4	1/8 Ha.	10 meses	G.3	
6	Control de malezas en arrozales con herbicidas pre- emergentes en fangueo semilla pregerminada	RH 8817 - 0, 3 - 0, 5 - 0, 7 Kg/Ha RH 5205 - 0, 3 - 0, 5	RCB	Suelo	7-17-78	P	Agronomía y adiestramien- to
Corto		Goal 2E - 0, 15 - 0, 30 Avirosan(Dimethametrina) Testigos	4	1/9 Ha.	10 meses	I.3	
7	Control de malezas en arrozales con mezclas de Propanil. Herbicidas post emergentes en arroz en fangueo semilla pregerminada	RH 2512 RH 2915 RH 5205 Propanil+Benthiocarbe	RCB	Suelo	7-17-78	P	Agronomía y adiestramien- to
Corto			4	1/8 Ha.	10 meses	I.3	

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: ARROZ

SECTION: AGRONOMIA Y ADIESTRAMIENTO

SCIENTIST: JOAQUIN GONZALEZ

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
8 Corto	Herbicidas pre y post emergentes solos y en mezclas	Aplicaciones a los 4-12 días de combinaciones de Avirosan, Butaclor, Bentiocarbo, Molinate, Oxa-diazon y Propanil	RCB 4	Suelo 1/8 Ha	5 meses	P I.3	Agronomía y adiestramien- to
9 Corto	Herbicidas post emergentes usando úrea como vehículo de aplicación. En fangueo semilla pregerminada	Urea sola y en combina- ción con 2,4-D; 2,4,5-T; MCPA; Tordon. Bentazon	RCB 4	Suelo 1/8 Ha	7-17-78 5 meses	P I.3	Agronomía y adiestramien- to
10 Corto	Control químico del insecto Hydrellia sp. Muy baja población del insecto	Comparar control Diazinon, Carbofuran, Fosfamidon, Dicrotofos y Carbaryl	RCB 4	Suelo 1/5 Ha.	5 meses	P I.3	Agronomía y adiestramien- to
11 Corto	Multiplicación de semilla a partir de cantidades pequeñas usando deshije. Comparar	Testigo:Transplante uno, dos, tres y cuatro deshijes	RCB 3	Suelo 1/5 Ha.	8-22-78 7 meses	P I.3	Agronomía
12 Corto	Comparación de 9 variedades comerciales en su rendi- miento en soca Se cosechó. Se observa la soca	CICA 4, CICA 6, CICA 7, IR22, Inti, IR8, CICA 8 Juma	RCB 3	Suelo 1/9 Ha	5-15 5 meses	P G.3	Agronomía y adiestra- miento
13 Corto	Incidencia e interacción de prácticas de cultivo sobre rendimiento y desarrollo del arroz, CICA 8	Densidad de siembra; 2 niveles de fertilizantes nitrogenados, control de insecto y malezas	SSP 3	Suelo 3/7 Ha.	8-30-78 5 meses	P G-3	Agronomía y adiestra- miento

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: RICE

SECTION: BREEDING

SCIENTIST: H. WEERARATNE

Number	TITLE: PURPOSE	Design/ treatments	Re- quire- ments	Date/ dura- tion	Location	REMARKS
	LONG TERM BREEDING PROJECTS					
1	Multiline project I for blast resistance with two varieties (4414 and CICA 9) and five sources of resistance.	B3 F ₂ Families	0.5 Ha	2-1/2 Years	ICA Palmira	
2	Multiline project II for blast resistance with seven parents (4414, 4440, 4468, CICA 9, CICA 4, Linea 8, Bg 90-2) and seven sources of resistance.		1.0 Ha	5 Years	CIAT Palmira	Backcrossing program Yet continuing in Mesh house
3	Multiple resistant multiline project of six isogenic lines each isogenic line combining resistant factors from three sources of resistance		0.5 Ha	2-1/2 Years	CIAT Palmira	3 way crosses just being completed
4	Breeding project for horizontal resistance to rice blast with sources of resistance from West Africa, Suriname, Japan and IRRI		1.5 Ha	5 Years	CIAT Palmira Quilichao	Crosses being effected in green house
5	Breeding project for the improvement and correction of the defects in Bg 90-2 (improvement in grain quality and incorporation of blast resistances).	27 F ₂ Populations 3 way crosses	1.0 Ha	4 Years	CIAT Palmira Quilichao	
6	Breeding project for a further yield improvement with resistance and tolerance to major production constraints Blast disease - Sogata insect - Sheath Blight - Bacterial leaf blight - Salinity	200 F ₂ Populations 3 way crosses	4.0 Ha	5 Years	CIAT Palmira	35-40 F ₂ populations to be planted every two months
7	Breeding project for early maturity duration (110 days)	17 F ₂ Populations	1.0 Ha	4 Years	ICA Nataima	

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM:

SECTION:

SCIENTIST:

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CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

PROGRAM: RICESECTION: BREEDING (ICA-CIAT)SCIENTIST: H. WEERARATNE

Number	TITLE: PURPOSE	Design/ treatments	Re- quire- ments	Date/ dura- tion	Location	REMARKS
1	Yield evaluation of 55 multiple resistant (combing resistant factors from 3-4 sources) progenies	R. C. B. 3 Reps	0.40 Ha	5 Months	ICA Palmira	
2	Evaluation of 23 F ₆ progenies (selected from bulk F ₄ seed of 3 way crosses brought from Sri-Lanka) for their yield potential for the detection of donor parents for high yield.	R. C. B. 3 Reps	0.25 Ha	5 Months	CIAT Palmira	
3	Evaluation of 23 progenies for yield potential and tolerance to sheath blight	R. C. B. 3 Reps	0.25 Ha	5 Months	CIAT Panamá Montería	
4	Evaluation of 140 advanced breeding lines for adaptability to irrigated and favoured upland conditions	Observa- tions Plots	0.25 Ha	5 Months	Ecuador Costa Rica	
5	Transfer of blast resistance to Bg 90-2 source of resistance (Tetep)	B ₃ F ₂ 27	0.10 Ha	2 Years	CIAT Palmira	
6	Chemical induction of male sterility in rice with (Ethrel) 2 chloroethylephosphonic acid)	R. C. B. 2 Reps 3 Couts 3 Variet.	200 sq.m.	5 Months	ICA Palmira	
7	Study of inheritance of resistance to <u>Sogatodes oryzae</u> in ten varieties of rice	F ₂ Evaluation	Green House	3 Months	ICA Palmira	Green house

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

4.1.3

PROGRAM: Arroz

SECTION: IRTP

SCIE NST: Manuel J. Rosero

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date, Dura- tion	Loca- tion	REMARKS
1	Parcelas de demostración - para mostrar a visitantes y becarios las principales variedades de América Latina	34 variedades	1	5000m ²	III-/78 perma- nente.	I-3	Siembra continua cada dos meses.
2	VIRAL-Precoces - Evaluar y seleccionar el mejor material para América Latina	28 variedades	3	1800m ²	III-/78 6 meses	I-3	Multiplicar semilla para los Virales.
3	VIRAL-Tempranas, 1978 - Comparar rendimiento con el resto de América Latina	15 variedades	3	1000m ²	III-/78 6 meses	I-3	
4	VIRAL-Secano, 1978 - Determinar el potencial de rendimiento en condiciones de riego y multiplicar semilla	20 variedades	3	1200m ²	III-/78 6 meses	I-3	
5	VIOSAL, 1978 - Determinar el potencial de rendimiento en condiciones normales de riego	25 variedades	3	1500m ²	III-/78 6 meses	I-3	Multiplicar semilla para distribución en América Latina.
6	Vivero de Observación VIOAL, 1978 - Multiplicar semilla y seleccionar las líneas más adecuadas para América Latina.	74 líneas promisorias	1	1500m ²	III-/78 6 meses	I-3	
7	VIAVAL, 1978 - Determinar rendimiento y resistencia al Añublo de la vaina.	20 variedades	3	1200m ²	III-/78 6 meses	I-3	
8	Vivero Piricularia VIPAL, 1978 - Multiplicar semilla y seleccionar las resistentes para pasarlas a Viveros de rendimiento en América Latina	247 líneas promisorias	1	5000m ²	III-/78 6 meses	I-3	
9	<u>Viveros de IRRI</u> IRYN-E - Variedades Precoces. Evaluar y seleccionar las más adecuadas para virales.	28 variedades	3	1800m ²	VI-29 6 meses	I-3	Purificar y formar los viveros 1979 para A. Latina
10	IRYN-M - Variedades Tempranas. Evaluar y seleccionar las más adecuadas para virales	28 variedades	3	1800m ²	VI-19 6 meses	I-3	Purificar y formar los viveros 1979 para América Latina.
11	IRYN-L - Variedades Tardías - Evaluar y seleccionar las más adecuadas para Virales	26 variedades	3	1600m ²	VI-20 6 meses	I-3	Purificar y formar los viveros 1979 para América Latina.
12	IURYN-Variedades de Secano - Evaluar rendimiento en riego y multiplicar semilla para Vivero de Secano en América Latina	28 variedades	3	1800m ²	VI-20 6 meses	I-3	Purificar y formar los viveros 1979 para América Latina.

CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

Guillermo G. Gómez

PROGRAM: SwineSECTION: SwineSCIENTIST: Julián Buitrago A.

Number	TITLE: PURPOSE	TREATMENTS	Design/REPS	Animals	Date/Duration	Location	REMARKS
8-1	Life-cycle feeding program using fresh cassava roots or cassava meal.	1) Corn + PS 2) Fresh cassava + PS 3) Cassava meal + PS	RCB (2 reps/treat)	24 gilts	One-year	P	PS = Protein supplement containing 42% protein
8-2	Cassava silage and sugarcane molasses for growing-finishing pigs.	1) Sorghum + PS 2) Ensiled cassava + PS (daily) 3) Ensiled cassava + PS (every other day) 4) Ensiled cassava + molasses + PS (daily) 5) Ensiled cassava + molasses + PS (every other day)	Individual feeding (5 reps/treat)	25 pigs	4-5 months	P	PS = Protein supplement containing 42% protein
8-3	Ensiled cassava combined with different protein supplements	1) Sorghum + SM + CM <u>Ensiled cassava plus:</u> 2) SB + CM 3) CM + FM 4) SM 5) FM	RCB (2 reps/treat)	50 pigs	4-5 months	P	SM = Soybean meal CM = Cottonseed meal FM = Fish meal
8-4	Protein restriction for cassava meal-based diets	1) Sorghum + PS 2) Cassava meal + PS + molasses: normal protein levels 3) Cassava meal + PS + molasses: 2% less in protein level	Completely randomized	24 pigs	4-5 months	P	PS = Protein supplement containing 41.5% protein
8-5	Evaluation of cassava leaf meal in diets for growing pigs	1) Cassava meal + PS (0% CLM) 2) 20% Cassava leaf meal 3) 40% Cassava leaf meal	RCB 5 pigs/rep; 2 rep	30 pigs	5-6 months	P	PS = Protein supplement containing 42% protein

Swine

Swine

SCIENTIST: Julián Buitrago A.

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REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENT

PROGRAM: GENETIC RESOURCES UNITSECTION: Plant BiochemistrySC NTIST: Robert A. Luse

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Study of herbicide residues as cause of Problem X in beans.-	Growth of plants in CIAT soils and others to which herbicides	typi- cally 4	Pots, glass- house	Contin- uing since	Glass- house	
		added.		space	Aug.77		
2	Methodology of seed drying to maintain seed viability during storage.-	Various seed types dried over silica gel	NA	Desic- cators, oven	From Feb.78	GRU	
3	Determination of cooking times in improved beans and of processing methods to shorten cooking time.-	Bean samples soaked and cooked, with hardness measured with penetrometer	NA	Hot plate, penetro- meter	From Sept.78	GRU	
4	Effect of storage conditions on development of hard seed coat in beans.-	Beans stored under different moisture and temperature conditions, then cooking time determined.	NA	As in 3	From June 78	GRU	
5	Determination of seed germination and vigor and of the influence of seed storage on these parameters of seed quality.-	Seed storage under various conditions (temp., humidity, time), followed by standard germination tests.	NA	Space in GRU stores, germi- nators	From March 78	GRU	
6	Estimation of genetic relationships between various <i>Phaseolus</i> materials (possible duplicates, interspecific crosses) via isozyme patterns (chemotaxonomy)	Extraction of leaf isozymes followed by electrophoretic separation	NA	Glass- house, electro- phoresis equip- ment	From Oct.78	GRU, West Wing Lab.	Now being set up

REGISTER OF
CURRENT RESEARCH ACTIVITIES/EXPERIMENTS

 PRO RAM: Genetic Resources Unit

 SECTION: Germplasm

 SCIENTIST: Dr. Leonard Song

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
1	Clean seed production of <i>P. vulgaris</i> (new materials cleaned before).	4 m row; 2,200 accessions of bank materials.	1	1.2 ha	Oct.78	Popayán	To commence when land is ready.-
2	Clean seed production of <i>P. vulgaris</i> (old bank materials cleaned before).	4 m row; 2,000 accessions	1	1.2 ha	Oct.78	CIAT (O-2S)	To commence when land is ready.-
3	Evaluation of 200 accessions of <i>P. vulgaris</i> (France collection)	6 m row per accession	1	0.2	Oct.78	CIAT (O-2S)	To commence when land is ready.-
4	Evaluation of 210 accessions (pure lines) of <i>P. lunatus</i> .	6 m row per accession	1	0.2	Oct.78	CIAT (O-2S)	To commence when land is ready.-
5	Study percentage outcrossing in <i>Phaseolus</i> species.	6 m row per entry, 12 entries	4	0.3	Oct.78	CIAT (O-2S) Popayán	To commence when land is ready.-
6	Forage grass collection	3 m ² plots per entry; 80 entries.	1	0.2	Jan.78 indef- inite	CIAT (L-1E)	Living collection of grasses for observa- tion purposes.
	<u>Associated with J. Lyman's program</u>						
7	Evaluation of selected <i>P. lunatus</i> (climbers)	4 m row per entry; 50 entries.	3	0.2	Oct.78	CIAT (O-1N) Patifa	To commence when land is ready.-
8	Evaluation of selected <i>P. lunatus</i> (bush)	4 m row per entry; 30 entries.	3	0.2	Oct.78	CIAT (O-1N)	To commence when land is ready.-

TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARKS
Effects of growth regulators on the initiation of cassava meristem and shoot tip <u>in vitro</u> cultures.	Cv. CMC 84 NAA(4): 0,.1,0.2, 1.0 ppm / BAP (4): 0,0.1,0.2,1.0 ppm	5 reps	Cont- rolled light, temp.	V-11- 78/ 4 months	Fisio Yuca(*) Lab. Tempor.	NAA=naphtha neacetic ac BAP=Benzyl Amino Purir
Determine varietal effects on the initiation of cassava meristem and shoot tip <u>in vitro</u> cultures.	Cvs:CMC84, M Bra- sil 12, MPR 26, M Col 720, M Col 2, M Col 1008	6 reps	Cont- rolled light, temp.	V-30- 78/ 4 months	Fisio Yuca(*) Lab. Tempor.	Basal mediu MS-B ₅ (Murās ge/Skoog,19
Use of heat and cold therapy treatment prior to meristem culture for eradication of the "frog disease" from cassava.	Four cultivars. Temperatures: 36- 38°C, 15-17°C	6 reps	Cont- rolled light, temp.	V1-1- 78/ 4-5 months	Fisio Fito(*) Yuca L. Tempor.	
Effects of growth regulators on the growth of axillary buds of cassava stem cuttings <u>in vitro</u> , as a means to increase the rate of propagation.	Cv. M Col 9/NAA(4) 0,0.1,0.2,1.0 ppm BAP(4):0,0.1, 0.2, 1.0 ppm	4 reps	Cont- rolled light, temp.	V-17- 78/ 4 months	Fisio Fito(*) Yuca L. Tempor.	
Shoot tip culture for the propagation of cassava <u>in vitro</u> .	Five cultivars Hormones: GA, NAA, BAP	10 reps	Cont- rolled light, temp.	VI-78/ 4 months	GRU Lab.	
Low temperature, growth inhibitors, osmolarity, etc. as means to store cassava shoot tip/nodal cultures <u>in vitro</u> .	Five cvs., Various Hormones, Minimal media.	10 reps	Cont- rolled light, temp.	VI-78/ 6 months	GRU LAB.	
(*) Will be transfered o GRU Lab. soon.						

Number	TITLE: PURPOSE	TREATMENTS	De- sign/ REPS	Re- quire- ments	Date/ Dura- tion	Loca- tion	REMARK
	<u>Seed Increases</u> Ant. x Dom. Rep. Population CIMMYT materials				6 mo. "	03N.	
	Br2 materials DMR materials Early materials from Colombia & Venezuela				" "		
	SUWAN - 1 Tuxpeño Caribe 2 .				" "		
	<u>Observation Nurseries</u> o2 Materials from CIMMYT Tuxpeño o2						
	<u>Recombinations</u> La Posta PD(MS-6) HE o2		half- sib half- sib				
	<u>Yield Trials</u> Early Materials CIMMYT CIAT materials		RB lattice				
	Suwan - 1		lattice				
	<u>Fall Armyworm Resistance</u> Materials selected from ETO blanco, (Ant. x Ver.181 x Ven.1 o2, blanco Cris- talino x Ant. x Dom. Rep						