

AGENCY FOR INTERNATIONAL DEVELOPMENT (A.I.D.)

PROJECT AUTHORIZATION

49
10/24/70

1. PROJECT NUMBER 503-11-110-543	3. COUNTRY IA Regional	4. AUTHORIZATION NUMBER
2. PROJECT TITLE Control of Hemileia Rust of Coffee in the Western Hemisphere		5. AUTHORIZATION DATE December 21, 1970
		6. PROP DATED November 24, 1970

7. LIFE OF PROJECT

a. Number of Years of Funding: 1
Starting FY 19 71; Terminal FY 19 71

b. Estimated Duration of Physical Work
After Last Year of Funding (in Months): None

FUNDING BY FISCAL YEAR (in U.S. \$ or \$ equivalent)	COLLARS		P.L. 480 CCC + FREIGHT	LOCAL CURRENCY Exchange Rate: \$1 =			
	GRANT	LOAN		U.S. OWNED		HOST COUNTRY	
				GRANT	LOAN	JOINTLY PROGRAMMED	OTHER (for equivalent)
Prior through Actual FY							\$ 147,500
Operational FY <u>71</u>	\$ 14,950						
Budget FY							
B + 1 FY							
B + 2 FY							
B + 3 FY							
All Subsequent FY's							
TOTAL	\$ 14,950						\$ 147,500

8. DESCRIBE SPECIAL FUNDING CONDITIONS OR RECOMMENDATIONS FOR IMPLEMENTATION, AND LIST KINDS AND QUANTITIES OF ANY P.L. 480 COMMODITIES

9. CONDITIONS OF APPROVAL OF PROJECT

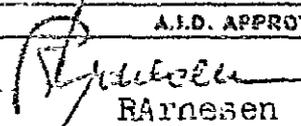
Project is approved for one year. After six (6) months, it will be reviewed to determine source of future funding.

(Use continuation sheet if necessary)

10. Approved in substance for the life of the project as described in the PRCP, subject to the conditions cited in Block 10 above, and the availability of funds. Detailed planning with cooperating country and drafting of implementation documents is authorized.

This authorization is contingent upon timely completion of the self-help and other conditions listed in the PRCP or attached thereto.

This authorization will be reviewed at such time as the objectives, scope and nature of the project and/or the magnitude and scheduling of any inputs or outputs deviate so significantly from the project as originally authorized as to warrant submission of a new or revised PRCP.

A.I.D. APPROVAL		CLEARANCES		DATE
 R. Barnesen SIGNATURE	12/29/70 DATE	J. Blocher, IA/DR <i>[initials]</i> Jack Keller, IA/PR <i>[initials]</i>		12/24/70
		W. Wren, IA/OPNS <i>[initials]</i> Boyd E. Whittle, IA/ER/AI <i>[initials]</i> D. Gilbert, IA/Int/LASA <i>[initials]</i>		12/23/70
AA Assistant Director TITLE				12/29/70

NON-CAPITAL PROJECT PAPER (PROP)

Project Title: Control of Hemileia Rust of Coffee in the
Western Hemisphere

NON-CAPITAL PROJECT PAPER (PROP)Country: RegionalSubmission Date:Project Title: Control of Hemileia Rust of Coffee in the Western HemisphereU.S. Obligation Span: FY 1971 through FY 1975Gross Life of Project Financial Requirements:

U.S. Dollars \$ 115,000

Other Contributions:

Institute of Inter-American
Agricultural Science Project 1,475,000 ^{1/}I. Summary Description of Project.A. Justification.

Foreign Exchange earnings from the sale of coffee in the international market are vital to Latin America coffee producing countries. It is estimated that in Latin America, coffee is the livelihood for an estimated 11,500,000 people. In 1968, the trade of coffee provided earnings of \$2,300,000,000 to the coffee countries of the globe. This figure represents 16.3% of the total foreign exchange earned by the major Latin American coffee-growing nations. The United States in 1968 bought some 25,378,000 bags (132 pounds each) of coffee, or 45.4 per cent of the world's total coffee exports, amounting to \$1,139,580,000. Of this sum, Latin America earned \$777,590,000 (68%). In Brazil, by far the largest Latin American coffee producer, roughly 6 million people are employed in some phase of coffee production (Brazil population 90 million). The Costa Rican coffee office estimates that 600,000

1/ The amount represents cash contributions-additional in-kind contributions will consist of multiplication nurseries, laboratory facilities, office space, vehicles and other equipment required to carry out the project.

of the 1.5 million inhabitants of that country depend totally or partially on the production, industrialization and marketing of coffee.

Much of the earnings from the sale of coffee was spent for U.S. exports. In 1968, the major Latin American coffee producing nations alone imported over 4 billion dollars worth of industrial and farm goods from the United States. U.S. trade with the coffee producing countries of Latin America generated an estimated 300,000 jobs and \$2 billion in wages and farm income in the United States. Thus, some 1,400 U.S. cities, towns and communities in all of the 50 states benefited from the contribution of coffee to American prosperity.

It is obvious that any happening which might materially reduce the amount of coffee produced in the Latin American countries would have grave effect on the economy of the hemisphere. It is not surprising then, that the discovery of Hemileia coffee leaf rust by a pathologist in Brazil in January 1970 came as a shock to all of those concerned with the industry. Best possible estimates indicate the disease was introduced into the state of Bahia some five years ago. Spread of the disease into the major coffee producing regions could seriously upset the balance of the Brazilian economy if adequate control measures are not taken.

It is estimated that 1 percent of the coffee trees in Brazil - in an area equal to that of all of Central America - have been affected with rust. Affected trees, being seriously defoliated, are reduced in production by a minimum of about 50 percent of normal production. The 1969 crop is estimated at 19 million 60 kilo bags. At \$40 per bag, this represents \$800 million.

On this basis, damage to even 1 percent of all producing trees in Brazil alone, using a 50 percent reduction in production, would total \$4 million in losses.

Air transportation from Brazil offers a means of spread for the disease to Colombia, Peru, Bolivia, Venezuela and other producing countries of the hemisphere. Spores of the disease have been known to be transferred as far as six hundred mile by air and can be maintained viable for months under dry conditions. Losses such as those described for Brazil, multiplied among the other Latin American countries could within a few years result in such uneconomical production as to have dire consequences for a continued hemispheric development.

In addition to losses from decreased production of affected plants, a control program involving substantial inputs by individual producers will be required. This is essentially a chemical spray program. If all farmers in the intermediate-risk areas of Brazil carried out a full protective spraying program, the total internal expenditure would be about US\$74 million annually; this is equivalent to 9 percent of the total foreign exchange earnings from coffee exported in 1958-69.

It is readily apparent that a program to control the spread of coffee leaf rust must be undertaken to prevent the loss of millions of dollars to the coffee producing countries of Latin America should the disease continue unchecked. With the coordination of the Institute of Inter-American Sciences (IICA) located at Turrialba, Costa Rica, meetings of leaders of the coffee industry from interested Western Hemisphere countries have been held and a

broad program has been approved for the control of the disease. This program will involve all of the coffee producing countries in Latin America and will be financed by the governments of the coffee producing countries in proportion to the basic export quota assigned by the International Coffee Organization (\$1,474,000 for 5 years).

This PROP describes a project to support the above mentioned program whereby the capability of the Agricultural Research Service of the United States Department of Agriculture will be utilized to carry out quarantine and distribution of plant material resistant to coffee rust, through IICA, to the coffee producing countries of the continent for rust control. It is necessary that national coffee breeding programs be systematically tested by inoculations with a wide range of rust races to determine those most suited for propagation. This must be done under strict quarantine conditions in a country where coffee is not grown commercially. The U.S. Department of Agriculture has been doing this kind of work for a number of years, but it was recently suspended due to a lack of sufficient funds to continue the program. The work proposed by this project will be carried out over a five year period and cost approximately \$115,000. The goal will be to control coffee rust in the western hemisphere tropics and thus maintain coffee production at a reasonable level.

It is intended to supply 14 coffee-producing countries with up to 100 rust tolerant lines of coffees as seed and 50 lines as individual plants to propagate annually. A USDA scientist will be sent to the Coffee Rust Research Center at Geiras, Portugal to observe latest techniques in screening of plants, determine the security of isolation of plants to be received, and arrange for a systematic program of shipment from Portugal consistent with the USDA's

capabilities for propagation at Glenn Dale, Md. USDA plant collector will visit centers in Africa for the purpose of collecting rust tolerant species to be sent to Glenn Dale, Md. for increase and distribution. Seeds, seedlings and cuttings from existing stocks in the USDA's Miami collection will be inventoried and distributed to coffee producing countries.

It is expected that the distribution of coffee rust tolerant lines and subsequent planting by producers in the various countries where the disease may spread, coupled with a spray program, will effectively control the disease in Brazil and prepare the other countries to cope with the problem should it gain entrance.

B. Planned Inputs: FY 1971 through FY 1975.

Services will be provided by the U.S. Department of Agriculture under a Participating Agency Service Agreement (PASA):

Intermediate quarantine propagation Beltsville & Glenn Dale, Md.	\$ 62,000
Providing seed and/or plants from existing collection, Miami, Fla.	30,000
Short term plant exploration for germ plasm of wild <i>Coffea arabica</i> and other species with potentials for coffee improvement (3-month period)	8,000
	<hr/>
Sub-Total	\$ 100,000
ARS Administrative Overhead (15%)	15,000
	<hr/>
Total	\$ 115,000

II. Setting.

Prior to 1970, coffee grown in the Americas had been free from its most devastating disease, the rust Hemileia vastatrix. This situation changed with the discovery of the disease in Brazil. Surveys since that time show it has spread through an extensive region in the states of Bahia, Minas Gerais and Esperito Santo. It is firmly established, and under such varied conditions as to make its eradication a practical impossibility. Where found, it appears to have been present from less than one year to perhaps five growing seasons. Various scientists have considered the classic coffee rust as being one of the worst plant diseases of all times; classed with Phytophthora blight of potato, Tilletia stinking smut of wheats, Puccinia black stem rusts of wheat and other cereals, Plasmodiophora club root of cabbage and relatives and Fusarium wilt of cotton, bananas and plantains.

A circumstance that has been of special value to coffee production in all the Americas has been the fact that it has escaped the presence of these destructive diseases, including leaf rust, to which almost all trees in the hemisphere are susceptible. With its recent appearance in Brazil, coffee leaf rust is a matter of increasing concern to all producing countries in the western hemisphere tropics. Its history in the eastern hemisphere shows that once established in a region, coffee rust sooner or later, and inexorably, spreads from country to country.

In Indonesia, in less than ten years a 90% reduction in coffee production was brought about by the disease. The disease struck in Ceylon in the late 1800's resulting in a mass migration of laborers from that country. Hemileia

rust was discovered in a plant introduction in Puerto Rico in the early 1900's. Fortunately, it was eliminated through the rapid identification of the disease and destruction of all plants found to have been infected.

The Hemileia rust is an extremely complex pathological problem to attack. U.S. grant assistance to the Coffee Rust Research Center located at Ceiras, Portugal, through the International Cooperation Administration (ICA) resulted in identification of some sixteen or more separate strains of the disease during the period 1955-56. Plant collections sent from all parts of the world indicated various strains of Coffee arabica demonstrated genetic tolerance to one or more of the strains of rust. Only one tree of this variety has been found tolerant to the disease in all of its known forms to date. Other less desirable coffee varieties show considerable tolerance. Plant material of a number of these selected types now exists in collections in Florida (United States Department of Agriculture introduction station), Costa Rica, Colombia and Brazil, yet no commercial plantings have ever been made and yield testing of most still must be carried out. Fungicidal spray control of the disease is possible and effective; however, applications must be made at least once per month during the entire rainy season. Cost of application is high and difficult terrain in many cases complicates the operation. Effectiveness depends on various factors such as rainfall, spray coverage, efficiency of equipment, etc.

Confirmation of the existence of the disease in Brazil brought immediate action from authorities in that country. A survey was conducted to study the location of the rust, its extension and its course. Responsibility for

developing a program of control was assigned to a department of the Brazilian Coffee Institute and the most experienced scientists available were designated to lead the campaign to control the disease. Technicians were trained to recognize the disease and thousands of leaflets describing the menace and depicting the symptoms in color were prepared and distributed. Two outside consultants, both top men in the field, Dr. Branquinho de Oliveira from the Coffee Rust Research Center in Oeiras, Portugal, and Dr. Frederick L. Wellman, visiting professor of plant pathology at North Carolina State University were brought in for consultation. A security zone 50 kilometers wide and 800 kilometers in length has been established along the edge of the infected area in order to prevent the passage of the disease across the strip. Control measures, using both fungicidal spraying and eradication techniques are being carried out in the affected areas. Tests are being made of various spray application techniques, spray materials and eradication procedures. Infra-red photographic detection techniques are also being evaluated. A center for Coffee Rust Research has been established in the southwestern part of Minas Gerais. This is located near a heavily infested area on the fringe of the major coffee producing zone.

Undoubtedly, the greatest hope for eventual economical control of coffee rust lies in the breeding of resistant varieties. Plant breeders at the Instituto Agronomico, Campinas, State of Sao Paulo, have been breeding coffee resistant to Hemileia vastatrix in a minor plant improvement activity since about 1952, having started this work with resistant material sent to them by Dr. Wellman at the time when Wellman was working on an A.I.D. (ICA)-supported project involving the collection and distribution of rust resistant

4-

coffee variety. This program, now being rapidly expanded, is developing varieties having tolerance to the Race Hemileia (the principal race found in Brazil) already exist though yields of these types are less than present commercial varieties used in Brazil. Approximately \$9 million equivalent is being made available per year by the Brazilian National Monetary Council to finance the total rust control program. This fund is administered by a committee consisting of one representative of the Ministry of Agriculture and two from the Brazilian Coffee Institute.

The Brazilian Coffee Institute is preparing on behalf of the Brazilian Government, a coffee rust project for submission to the Diversification Fund of the International Coffee Organization. This project may require a total of roughly \$600,000 or about one fifth of the anticipated total contribution of Brazil to the Organization's Diversification Fund. The Ministry has asked the government of the United Kingdom to send a group to Brazil to advise on the development of a coffee leaf rust research program.

A successful program for quarantine propagation and distribution of rust tolerant coffee stock was developed by the Agency for International Development (I.C.A.) in cooperation with the United States Department of Agriculture between 1951 and 1959. In 1955, the Coffee Rust Research Center was established at Oeiras, Portugal, amplifying studies already begun on this disease at the National Agronomic Station at Sacavem, under the direction of Dr. Branguinho de Oliveira. Research on coffee is still being carried out at this center which includes basic studies on the pathogens, experimentation on the resistance of coffee plants to the disease and the isolation of different strains of the fungi found in various parts of the world. Hybrids have been produced from various resistant types, and genetic studies are being carried out on the

various factors involved.

Production and quality trials have been conducted on certain resistant varieties in several countries, including some carried out at the Inter-American Institute of Agricultural Sciences (IICA) of the Organization of American States located at Turrialba, Costa Rica, the Ministry of Agriculture in Costa Rica, the Coffee Association of Colombia and the Agronomic Institute of Campinas in Brazil.

Recognizing the need for a single organization, international in scope, to coordinate a program to study coffee leaf rust in the hemisphere, IICA, at a board meeting held in April, 1970, was requested to propose a project to study the control of coffee rust. This body further directed the Director General of IICA to call a technical meeting, continental in scope, to analyze the situation created by the existence of Coffee Rust in Brazil and to establish the lines of action to be followed. This meeting was held from June 29 to July 3, 1970 and a Hemileia Rust Control project having a number of specific objectives was approved.

The objectives call for providing assistance to member countries in carrying out needed measures to effectively impede the introduction of the fungi H. vastatrix and H. coffeicola. This would be achieved by means of consulting services offered to the national organizations with the cooperation of regional entities with technical capability in this field such as the Central American Regional Sanitary Organization (OIRSA). A principal goal is to establish, in collaboration with member countries by means of necessary experimentation, various lines, hybrids of varieties of coffee which present resistance to strains of H. vastatrix (especially strain II) or H. coffeicola.

which also have production capacity and quality comparable to the best varieties grown in the different countries.

The direction and coordination of this project will be carried out by a project chief who will live at the Turrialba Center, and who will be under the supervision of the Director of IICA-CEI. The project will consist of five professional and auxiliary personnel part-of-whom-would be located at Turrialba Center, four in Brazil and one or two specialists located at the Coffee Rust Research Center at Oeiras, Portugal. This personnel will travel to the different member countries as needed. Consultant services for short periods will be provided as required.

The duration of this project is proposed for 5 years. The budget requirement is \$295,000 per year (\$1,475,000 for 5 years). Financing will be provided by the governments from the coffee producing countries in proportion to the basic export quota assigned by the International Coffee Organization.

III. Strategy.

As a result of the rapidly expanding coffee rust disease problem in Brazil, plus the threat this newly introduced disease presents to other coffee producing countries in the Western Hemisphere, there is need to provide safe access to rust resistant breeding material from Africa and elsewhere. At the technical meeting on coffee rust held at San Jose, Costa Rica June 29 to July 3, 1970, the following resolution was passed:

It is recommended that the IICA solicit the Government of the United States to reinforce and amplify the necessary facilities of the USDA to carry out quarantine and distribution of plant material resistant to coffee rust, through IICA, to the coffee producing countries of the continent for the program of rust control.

It is necessary that national coffee breeding programs be systematically tested by inoculation with a wide range of rust races to determine those most suited for propagation. Many countries, however, now aware that they are likely subjects for rust epidemics, are anxious to find rust resistant planting material by the fastest means possible. They are attempting in some cases to obtain stocks direct from Africa. This is a dangerous approach. In addition, countries such as Angola and Brazil are sending huge quantities of seed to the Coffee Rust Research Center in Portugal to search for individual plants with multi-race resistance. If these plants are not returned to the country through an intermediate quarantine propagation facility, there is a high possibility of the importation of new and more virulent rust types than already exist. The intermediate quarantine propagation facility must be located in a country where coffee is not grown commercially. From there it can be cleared and consigned to the various national centers actively engaged in coffee breeding and selection. These include Turrialba, Costa Rica; Campinas, Brazil; Chinchipe, Colombia, Guatemala, El Salvador and Mayaguez, Puerto Rico.

Since coffee is not grown commercially in the United States, the inspection and quarantine facilities of the USDA at Glenn Dale, Md. is the logical location for clearing all materials which are to be distributed to the research centers mentioned above. All materials will be sent directly from the Coffee Rust Research Center in Portugal to Glenn Dale, Md. for inspection, fumigation and clearance before being sent to the Latin American locations. In addition, some new materials located in

Africa or Asia may be sent directly to Glen Dale. All these materials will then be sent to Turrialba where a complete collection will be maintained in a coffee producing area. Where sufficient stocks are available materials may be sent simultaneously to Turrialba, Costa Rica; Chinchina, Colombia; and Campinas, Brazil. It is important that materials be available from a center in a rust free country.

The station at Turrialba (IICA) will serve the important function of distributing materials from its complete collection (over 20 acres in size and more than 800 lines in 1970) to research stations throughout Latin America. A multiplication program at Turrialba will make stock available to all countries requesting it.

Coffee breeding programs in Latin America will be developed on a national basis, but will make full use of the international reservoir of genetic diversity. Conditions and requirements differ markedly between the various coffee growing countries and it is unlikely that it will be possible to establish sufficient agreed, breeding criteria on which to base a fully integrated international program. It is important that steps be taken in this direction, however.

This project will have the purpose of establishing an introduction and quarantine increase program to meet the needs of Latin America for new coffee germ plasm. This represents essentially a renewal and expansion of the program carried out between A.I.D. and the USDA during the period 1951-1959 and is considered especially important at this point in view of the threat of spreading coffee leaf rust through the western hemisphere tropics. Since the Agricultural Research Service of the U.S. Department

-14-

of Agriculture has the facilities, capability and basic plant stock on hand along with experience in conducting the type of work required, a Participating Agency Service Agreement will be arranged between the A.I.D. and the USDA to accomplish the objectives of the project.

IV. Planned Targets and Results.

The USDA had a cooperative project with the Agency for International Development between 1951 and 1959 designed to carry out a program for the introduction and distribution of breeding material through its inspection facilities in Washington, D.C., Glenn Dale, Maryland and Miami, Florida. During this period, more than 900 introductions were made and more than 50,000 plants were successfully distributed to research centers in Latin America as well as in Asia, Africa and India. Material was received and distributed to more than 25 different countries, eight of which are in Latin America. Plants from each line were also sent to Portugal for evaluation of their behavior among the various races of the fungus.

Because of the decreasing movement of plant materials through the Department of Agriculture introduction facilities in recent years, A.I.D. discontinued its support to that project in 1959. As a result, the USDA has done nothing more than to maintain a small collection of resistant coffee lines in Florida which were introduced during the active period of the project.

The target of the project will be to provide the coffee producing countries of Latin America with new coffee germ plasma resistant to coffee

leaf rust. This, coupled with a spray program and other measures for controlling the disease is an important element of the broad program for controlling the spread of the disease. The goal of the project is to limit spread of the disease in order to maintain existing levels of coffee production, essential if the exporting countries are to retain a reasonable foreign exchange balance.

Approximately 100 lines of coffee as seed and 50 lines as individual plants will be propagated annually in 14 Latin American countries. A documented listing of approximately 400 varieties now in the USDA Florida collection will be provided to all coffee producing countries.

V. Course of Action.

The activities to be carried out by the U.S. Department of Agriculture are as follows:

A. Seeds will be received in the program by the U.S. Department of Agriculture and carefully inspected for evidence of insects. If insects are found, the seeds will be properly fumigated. Each lot of seed will be assigned an appropriate identifying number and a permanent record of the origin and all other descriptive information concerning each lot will be maintained both in the U.S. and in cooperating Latin American countries.

B. Intermediate Quarantine Propagation - Beltsville and Glenn Dale, Maryland.

1. Seeds and plants of coffee lines will be received and identified as sources of rust resistance from Africa, Asia, Philippines, the South Pacific and the Coffee Rust Research Center in Portugal.

Propagation of adequate quantities of plants to meet the needs of breeders in Latin American coffee producing countries will be provided. This involves seed germination, propagation and growing all plants under quarantine for sanitary purposes.

3. An appropriate number of each line increased will be sent to cooperating recipients. It is estimated that there will be up to 100 lines of coffee as seed and 50 lines as individual plants to propagate annually.

4. A visit will be made by a principal scientist from the USDA to the Coffee Rust Research Center, Oeiras, Portugal to observe the rust screening program, determine the security of isolation of plants to be received, and arrange for a systematic program of shipment from Portugal consistent with the USDA's capabilities for propagation at Glenn Dale, Maryland.

C. Seed and/or plants from existing collection at Miami, Fla.

1. An inventory and documentary listing of the approximately 400 varieties now held in the Miami collection will be prepared and provided to coffee producing countries.

2. The collection in Miami (now on a standby basis) will be renovated in order to produce adequate seed crops to fill requests from breeders.

3. Seeds, seedlings and/or cuttings for use in breeding programs will be harvested, processed and shipped to recipient countries or sent to the Coffee Research Center to be screened for resistance. As soon as all relevant Florida lines are established in Latin America, this

-17-

collection will be eliminated.

D. Short term plant exploration for germ plasm of wild Coffea arabica and other species with potentials for coffee improvement.

A USDA plant collector now working in Africa will, for a period of three months, visit centers of diversity for selected coffee species -- seeds will be collected and sent to Glenn Dale, Maryland, for increase and distribution.

VI. Evaluation.

Management and evaluation of the project will be the responsibility of IA/DR/RD. The implementing agent of the USDA will be the New Crops Research Branch, Crops Research Division, Agricultural Research Service. The principal activity will be centered at Glenn Dale, near the Agricultural Research Center, Beltsville. The nearness to Washington will facilitate project monitoring.

NONCAPITAL PROJECT FUNDING (OBLIGATIONS IN \$000)

<u>Fiscal Years</u>	<u>Total</u>	<u>Personal Serv.</u>			<u>Participants</u>		<u>Commodities</u>	<u>Other Costs</u>	
		<u>AID</u>	<u>PASA</u>	<u>CON</u>	<u>US Agencies</u>	<u>CONF</u>		<u>Dir & US Ag.</u>	<u>CONF</u>
Prior Years	0	0	0	0	0	0	0	0	0
FY 71	35,000	0	35,000	0	0	0	0	0	0
FY 72	20,000	0	20,000	0	0	0	0	0	0
FY 73	20,000	0	20,000	0	0	0	0	0	0
FY 74	20,000	0	20,000	0	0	0	0	0	0
FY 75	20,000	0	20,000	0	0	0	0	0	0
Total Life	115,000	0	115,000	0	0	0	0	0	0

file

PROJECT AUTHORIZATION

1. PROJECT NUMBER 598-11-110-543	3. COUNTRY LA REGIONAL	4. AUTHORIZATION NUMBER
2. PROJECT TITLE Control of Hemileia Rust of Coffee in the Western Hemisphere		5. AUTHORIZATION DATE
		6. PROP DATED November 24, 1970

7. LIFE OF PROJECT

a. Number of Years of Funding: 1
Starting FY 19 70; Terminal FY 19 71

b. Estimated Duration of Physical Work
After Last Year of Funding (in Months): None

FUNDING BY FISCAL YEAR (in U.S. \$ or \$ equivalent)	DOLLARS		P.L. 480 CCC + FREIGHT	LOCAL CURRENCY Exchange Rate: \$1 =			
	GRANT	LOAN		U.S. OWNED		HOST COUNTRY	
				GRANT	LOAN	JOINTLY PROGRAMMED	OTHER (\$ or equivalent)
Prior through Actual FY							147,500
Operational FY 71	14,950						
Budget FY							
B + 1 FY							
B + 2 FY							
B + 3 FY							
All Subsequent FY's							
TOTAL	14,950						147,500

9. DESCRIBE SPECIAL FUNDING CONDITIONS OR RECOMMENDATIONS FOR IMPLEMENTATION, AND LIST KINDS AND QUANTITIES OF ANY P.L. 480 COMMODITIES

10. CONDITIONS OF APPROVAL OF PROJECT

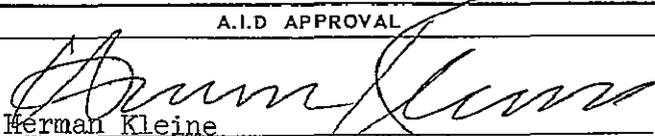
Project is approved for one year. After six (6) months, it will be reviewed to determine source of future funding.

(Use continuation sheet if necessary)

11. Approved in substance for the life of the project as described in the PROP, subject to the conditions cited in Block 10 above, and the availability of funds. Detailed planning with cooperating country and drafting of implementation documents is authorized.

This authorization is contingent upon timely completion of the self-help and other conditions listed in the PROP or attached thereto.

This authorization will be reviewed at such time as the objectives, scope and nature of the project and/or the magnitudes and scheduling of any inputs or outputs deviate so significantly from the project as originally authorized as to warrant submission of a new or revised PROP.

A.I.D. APPROVAL	CLEARANCES	DATE
 Herman Kleine SIGNATURE	LA/DR, IGSleeper (Draft)	12-24-70
	LA/DP, J. Heller (Draft)	12-24-70
	LA/OPNS, W. Wren (Draft)	12-20-70
	LA/DR, B. Whittle (Draft)	12-23-70
	LA/DP, R. Arnesen (Draft)	12-29-70
AA/La, Deputy U.S. Coordinator	A/CONT	
TITLE	DATE	

JUN 18 1971