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UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

DEPARTMENT OF PLANT PATHOLOGY

ANNUAL TECHNICAL REPORT OF 211(d) PROJECT

1969 - 1970

## TECHNICAL REPORT # 2

211(d) International Program  
University of Illinois  
May 1970

I. SUMMARY

The AID 211(d) Program in plant pathology at the University of Illinois is approaching the end of its second year of activity, having officially begun in June 1968. This is the second Technical Report concerning the development within the University of Illinois specialized competency in the identification and cause and control of diseases of agronomic plants of India, and establishment of the area of specialization as a legitimate and continuing function of the University. Progress reported in Technical Report #1 will not be reiterated except where necessary.

Plans for the remaining three years of the 211(d) Program are now complete. Emphasis must be placed on graduate student training for competence in overseas work in plant protection, particularly in plant pathology. The limited funds of the grant do not allow for development or expansion of other areas. It is felt that this is the area of international involvement that requires support at this time.

Approximately \$40,000 of 211(d) funds were expended during the year ending May 1970 in support of the Program. Over half of this amount (\$25,223) was for salaries, stipends, and fringe benefits. The remainder (\$14,682) was used to support the activities of the 211(d) Professor, and to provide moveable equipment and expendable items for the research program. Over \$25,750 was provided in support of 211(d) activities from funds other than 211(d) for direct support of the Program during the year. Cooperation at all levels with the 211(d) Program both at the University of Illinois and in India has made the success of the Program possible.

Activities generated by the 211(d) Program have met the objectives of the grant in both obvious and subtle ways.

Certainly through contacts with the 211(d) Professor and the graduate students involved in the Program, many faculty, students, nonacademic and nonuniversity personnel have become aware of the significance of the U.S. university in international agriculture. This has been accomplished through both formal classroom presentations and informal discussions. Announcements concerning these activities in newspapers and academic newsletters also make a contribution.

The Program has certainly increased the competence of the 211(d) Professor in international agriculture. The teaching of advanced courses and graduate student training programs under his direction is not only educating college students about international agriculture, but is assisting in acting as a catalyst in the expansion of interest and training of students in this area.

The graduate training program is increasing the pool of manpower with international experience and understanding of the problems of developing nations.

The Program is so arranged at this time that the U.S. graduate students work with graduate students from India in the same laboratory and on parallel research problems. The U.S. students will continue their association with these same Indian students when they travel to India to continue their studies. This certainly provides the basis for a strong training program.

The 211(d) Professor was asked to serve in three international programs this past year: (1) development of a tropical studies center in Jamaica; (2) the Program for International Research, Improvement, and Development of Soybeans; and (3) a research project on tropical root crops.

Other activities of the 211(d) Professor are presented.

II. LISTING OF GRANT OBJECTIVES

1. To increase the capabilities of the University of Illinois in the area of international agriculture, particularly in the area of plant protection and plant pathology, and to generate increased public awareness of the significance of the international dimension of university education and research.
2. To increase the pool of manpower with understanding of problems of developing nations.
3. To assist in the development of faculties with competencies in international agriculture, particularly plant pathology, at the University of Illinois and act as a catalyst in the expansion of interest and training for careers in international agriculture.
4. To educate college students for careers in foreign agriculture.
5. To more effectively use university personnel with foreign experience in the development and training of domestic and foreign students for professional positions in international agriculture.
6. To develop a corps of experts in the various phases of agricultural development which may contribute to the evaluation and solution of problems in which there is national interest.

### III. MAJOR ACCOMPLISHMENTS DURING THE YEAR

The 211(d) Program at the University of Illinois made remarkable progress in the past year. The Program, because of difficulties in staffing, got off to a slow start the first year, but now appears to be an overwhelming success, which wholly justifies the confidence of AID and CUSURDI in the entire program. The broad objectives of the grant are being met as the planning for the remaining three years of the Program are nearing completion. It should be emphasized that the progress reported here for 1969-70 in the 211(d) Program was possible because of: (1) substantial financial support from the University of Illinois and the College of Agriculture; and (2) the total cooperation on the part of University of Illinois personnel at all levels, as well as many institutions in India.

A. Development of Teaching Competence. A graduate course, open to undergraduates, concerned with the epiphytology of plant diseases was taught by the professor. The course was revised and its scope enlarged to include diseases of international importance on a variety of crops. The University of Illinois provided over \$400 for teaching aids and materials in direct support of the course.

The 211(d) Professor presented two special lectures during the Spring semester (1970) in a course concerned with the control of plant diseases. One lecture was concerned with the use of systemic fungicides for plant disease control. The second lecture was concerned with the need for international cooperation in planning plant disease, as well as other pest control programs. The 211(d) Professor also provided educational materials for use in the course.

In these two courses, it was estimated that over 50 students, both graduate and undergraduate, were made aware of the international aspects of plant diseases and plant disease control.

Plans for the new interdisciplinary (plant pathology, horticulture, and economic entomology) courses on international food crops were completed this year. University approval is expected this summer (1970). It will be taught during the Spring semester in 1971. It will cover the culture of international food crops, along with disease and insect problems and their control. Lectures on the need for increased world food production are anticipated. The three professors responsible for the lectures in this course have had overseas experience in several developing nations, including India, Africa, Latin America, and Indonesia.

A number of seminars were given this past year both at overseas institutions, as well as at the University of Illinois and Eastern Illinois University. An invitational seminar was given at Eastern Illinois University of the 211(d) Program and its role in international agriculture. Over 40 undergraduate and graduate students attended the lecture, as well as many faculty and staff members.

B. Development of Research Competence. A very active research and graduate training program has developed since the completion of the research laboratory in May 1969 (see Technical Report #1). A number of students were attracted to the program. It has become necessary to turn away qualified, dedicated young people who are sincerely interested in international work in agriculture, particularly plant pathology. This fact certainly indicates that strong consideration should be given to both increasing the support of the present program, as well as continuing support after the termination of the original grant in June 1973.

The research program involves laboratory, greenhouse, and field work (facilities provided by the University). All members of the research group work together and assist one another in their respective research efforts. The success of this relationship can be partially judged by the fact that at least four research papers from the program will be published in 1970.

Dr. Lynn Gray, Plant Pathologist with the U.S. Department of Agriculture, and the 211(d) Professor work together in the research program studying certain diseases of soybeans and their control. The graduate students select problems in the same general area. Soybean is being introduced as a possible food crop in India through the University of Illinois' contract team at Uttar Pradesh Agricultural University (U.P.A.U.) and the J. Nehru Krishi Vishwa Vidyalaya (J.N.K.V.V.) Both researchers advise the graduate students. It would be difficult to give a dollar value to the services of Dr. Gray and the contributions he makes to the Program.

There are now five graduate students in the 211(d) Program committed to training for overseas work. A schedule for their formal course work and research training has been worked out. The tentative schedule for each student's advanced training in India was formulated. There are two U.S. students and two students from India now actively engaged in training under the direction of the 211(d) Professor. Two additional U.S. students will begin their training in June 1970. A fifth U.S. student, R.A. Skora will receive training in India under 211(d) sponsorship beginning in September, 1970.

The laboratory program is so arranged that the two U.S. students now in the Program, W.A. Meyer (supported by the University), and R.W. Schneider, work closely with two Indian graduate students from U.P.A.U. The U.S. students share the same office space with one of the Indian students, P.N. Thapliyal, an A.I.D. participant. The other Indian student, P.D. Kharbanda, is supported by departmental funds (\$3,500). The two U.S. students have the unique opportunity to work closely and continuously with these two students from India. Either or both the U.S. students will go to U.P.A.U. for their advanced training. An excellent rapport and understanding has developed between these men, which will be continued when they are all in India. The two U.S. students joining the Program in June will have the same opportunity to work with the Indian students before the latter return to India.

Mr. Sikora does not work in the same laboratory, but he is professionally acquainted with the work Messrs. Kharbanda and Thapliyal are doing.

Plans for advanced training in India of graduate students for the remaining three years of the 211(d) Program are completed. There are five students in the Program:

Richard A. Sikora - Mr. Sikora will complete all the requirements for the Ph.D. in plant pathology with an emphasis in nematology by August 1970. He is now supported on departmental funds. Negotiations are complete for his appointment as a special student for one year beginning September 1970 at Uttar Pradesh Agricultural University, Pantnagar.

William A. Meyer - Mr. Meyer is now supported by other than 211(d) funds. He will complete the requirements for the Ph.D. in plant pathology through the preliminary examination during the Fall of 1970. Negotiations are underway to arrange for him to spend a year beginning in January 1971 at J. Nehru Krishi Vishwa Vidyalaya, Jabalpur, under sponsorship of the 211(d) Program.

Raymond W. Schneider - Mr. Schneider is supported by both 211(d) and the College of Agriculture international funds. He will receive his M.S. in plant pathology in January 1971 and proceed toward meeting the requirements of the Ph.D. degree. He is scheduled to receive his year's advanced training in India beginning in February 1972.

James F. Nicholson - Mr. Nicholson will begin his work on the Ph.D. in June 1970 with support from both 211(d) and the College of Agriculture international funds. His advanced training in India is scheduled for one year beginning in February 1972.

Bruce L. Kirkpatrick - Mr. Kirkpatrick will begin his work on the M.S. degree in June 1970 under the 211(d) Program. He will complete the course requirements for the M.S. in January 1972 and take six months advanced training in India beginning in February 1972.

C. Development of competence for Consultations and Service. The 211(d) funds have provided the unique opportunity for the University of Illinois to have a Professor with a strong interest in international agriculture to devote full time to the development of a program of teaching, research, and graduate student training with international dimensions as related to India.

In order to be knowledgeable in all aspects of international agriculture, and to carry out the format of the 211(d) graduate training program, it is mandatory that the 211(d) Professor make at least one trip to India each year.

Professor Sinclair made a return visit to India during December 1969 and January 1970 at a cost of approximately \$2,900. He attended the annual meeting of the Indian Phytopathological Society and gave an invitational research paper at the Indian Science Congress, both meetings being held consecutively at the Indian Institute of Technology at Kharagpur. This gave him the opportunity to meet with and discuss problems of mutual interest with a number of Indian scientists. Other Indian institutions visited were: J. Nehru Agricultural University, Jabalpur; Uttar Pradesh Agricultural University, Pantnagar; and the Indian Agricultural Research Institute, New Delhi. Informal meetings were held with members of the Indian Council of Agricultural Research. There was a strong and continuing interest in the 211(d) Program by many of the members of the various Indian institutions.

A graduate student, Richard A. Sikora, accompanied the 211(d) professor on the trip to India. Mr. Sikora's expenses (\$300), while in India, were paid from departmental international funds. The remainder of the expenses were paid by Mr. Sikora. While in India, the 211(d) Professor gave a series of seminars on systemic fungicides and Mr. Sikora gave seminars on the soybean cyst nematode.

Mr. Sikora will be returning to U.P.A.U. for a year as a special student under the 211(d) Program. During this visit, preparation were made and agreements finalized for Mr. Sikora's activities between September 1970 and August 1971.

Other universities and plant pathology research and teaching centers were visited on this trip. These were:

Hawaii - The East-West Center; The University of Hawaii; The Hawaiian Sugar Planters' Association; and the Pineapple Research Institute.

Philippines - International Rice Research Institute at Los Banos.

Nepal - Department of Agricultural Education and Research at Katmandu.

Iran - USDA Regional Pulse Improvement Project; University of Tehran; and the Plant Pests and Diseases Institute.

Lebanon - American University at Beirut; and the Agricultural Research and Educational Center at Baalbek.

Sierra Leone - Njala University College at Njala.

Further competence of the 211(d) Professor is reflected in his involvement in three international programs of the University of Illinois and the College of Agriculture. These are:

1. Development Plans for the University of Illinois' Jamaican Property.

The University of Illinois Foundation acquired 750 acres of land at St. Margaret's Bay in Jamaica, and proposes the establishment of a teaching and research center on this property. One of the purposes of the center is to provide a training ground for graduate students and faculty members who are anticipating working overseas. The 211(d) Professor was very active this past year in developing plans for this property. He assisted the ad hoc committee of the Graduate College to state the interest of the academic community in the development of the land. More recently he has been asked to serve on a three-man ad hoc committee for the U.I. Foundation to assist them in seeking support funds for the property and then to serve as an internal advisory group until such time as the permanent advisory group is named.

2. Collaborator in Two College of Agriculture International Programs.

Professor Sinclair was asked to serve indefinitely as the collaborating plant pathologist in two major international programs in the College of Agriculture.

The first is with the Program for International Research, Improvement, and Development of Soybeans (PIRIDS). This is an interdisciplinary effort involving most departments in the College of Agriculture. It will eventually operate in at least 12 foreign countries. The soybean Coordinated Research Project in India is part of the PIRIDS Program.

The second is with the recently developed project on Tropical Root Crops. The program is coordinated by the Horticulture Department. Prof. Sinclair has traveled to Jamaica, Trinidad, and Puerto Rico to confer with various members of the University of the West Indies and other institutions on developing a coordinated study on tropical root crops. It is anticipated that the University's Jamaican property will be used for research on this important food crop of the tropics. The trip to the West Indies was supported by College of Agriculture international funds.

Competence in international agriculture was further developed by the 211(d) Professor in other areas:

1. He was named a "Career Consultant" in Agriculture/Plant Pathology for the Peace Corps. He has answered direct mail inquiries, as well as holding personal conferences with Peace Corps trainees.

2. He participated in "Earth Day" observances by giving a talk on air pollution on crop plants. It was emphasized that air pollution damage to plants is an international problem.

3. The 211(d) Professor was instrumental in having Dr. Y.L. Nene, Head of the Department of Plant Pathology, Uttar Pradesh Agricultural University, come to the UI campus to visit with the 211(d) graduate students, give a seminar to graduate students and faculty, and consult with various professionals on pathology problems in India.

4. He recommended that Dr. Eugene Terry, AID Participant in plant pathology at UI, visit the International Rice Research Institute on his return to Sierra Leone. Contacts with pathologists at IRRI were established during the recent trip to India. While at IRRI and then during the visit to Njala University, it was realized that Dr. Terry would gain much by visiting the highly respected research institute.

5. He has continued many of the activities initiated last year such as: (a) reviewing books with aspects of international plant pathology for the APS Newsletter; (b) participation in the Southern Regional Research Project (S-72) on soybean seed quality; (c) collaborating with Indian plant pathologists on planning research work, graduate student training, course offerings, etc.; (d) cooperating with other departments of the University of Illinois; and (e) cooperating with the 211(d) professors and other members of the Council of U.S. Universities for the Rural Development in India.

6. The 211(d) Professor has brought the 211(d) training program to the attention of potential employers, such as: Ford Foundation, Rockefeller Foundation, various industrial firms involved in international agriculture, UN-FAO, U.S.D.A., and other similar agencies. This work will continue so that employment for the 211(d) students may be assured after they finish their training.

D. Involvement of Other University Resources. The meager funds provided by the original 211(d) grant are not adequate to carry out the plans and scope of the present program. Many units of the University of Illinois provided either indirect or direct support to the program this past year.

Administrative services and advice provided by the: (1) Office of International Programs and Studies; (2) Office of Overseas Projects; (3) Office of International Agricultural Programs; and (4) Department of Plant Pathology.

All services for the operation of the teaching classroom and laboratories; the research laboratories, greenhouses and growth chambers are provided by the University.

More specific support came from:

The Department of Plant Pathology by providing:

1. \$1,000 for general support of the international program.
2. \$1,300 for a 1/4 time secretary.
3. \$800 for office supplies for the year.
4. \$400 for teaching aids and supplies.

The College of Agriculture by providing:

1. \$4,500 through regional research funds.
2. \$200 for renting approximately 1/2 acre of land for experimental field plots.
3. \$7,000 for support of one U. S. and one Indian graduate student in the Program.

The Office of International Agricultural Program by providing:

1. \$8,350 for a growth chamber.
2. \$1,000 in support of graduate training.
3. \$100 for consultant visit of Y. L. Nene.

AID by providing \$1,200 in support of the AID participant in the Program (P. N. Thapliayl).

Thus, over \$25,850 was provided from funds other than 211(d) for direct support of the 211(d) Program in the fiscal year 1969-70. The first year (1968-1969) over \$15,000 was provided.

E. International Programs of the College of Agriculture.

A relatively high and increasing level of activity in international programs continued throughout 1969-70. A principal objective of the Office of International Agricultural Programs is to strengthen the international programs of the College of Agriculture and its departments. One technique being employed is to organize interdisciplinary projects, each under a supervisor or director. One of these projects, the Program for International Research, Improvement and Development of Soybeans (PIRIDS) has received campus-wide support and worldwide expressions of interest and enthusiasm. Work was initiated in July 1969 with support of a modest grant from Rockefeller Foundation. Additional financing was provided through the Office of International Programs. Major additional support is being actively sought. This is a multi-disciplinary program with potentially heavy involvement of scientists from Agronomy, Agricultural Economics, Plant Pathology, Food Science, and Entomology. Soybeans offer a very real potential for a major contribution to solution of the world nutrition problem, particularly protein deficiency. Recently the Department of Food Science developed simple processing of soybeans for human consumption. Major support for PIRIDS is a high priority item in our future programs.

The project, Strategies for Agricultural Development, has progressed slowly since its inception last September. Two faculty members of the Department of Agronomy developed a proposal, as a result of a short assignment in India, for a streamlined soil survey based on soil productivity. If accomplished, this could be a major contribution to development planning in India. A project has been implemented to study the economics of rice production in West Africa. Several countries in the area all plan to increase rice production so they can export to their neighbors.

The work of the Crop Evolution Laboratory in the Department of Agronomy continues with an expansion in a new dimension. Professor de Wet is taking several graduate students with him on a plant exploration trip to Mexico.

The Jamaica property has been a major interest and concern of the College of Agriculture. Numerous staff members have been involved in and made trips to Jamaica to study its potential, problems of development, and possible use as a tropical area for international training, teaching, and research. Two plant pathology faculty members recently surveyed some of the soils to determine the presence of nematodes, a major soil pest affecting crops. This was under a recently established project, "Collection, Evaluation, and Improvement of Tropical Root Crops." A graduate student in agricultural economics is presently studying vegetable and fruit marketing problems and systems in Jamaica.

The 211(d) project in plant pathology continues at a high level of activity including substantial graduate student involvement. Plans are being finalized to send two U. S. graduate students to India to do doctoral research in the near future.

Agricultural entomologists have a very ambitious program with a substantial overseas involvement. A graduate student is presently doing his doctoral research in India. As a result of cooperative programs abroad, an international collection of thousands of specimens of Thysanoptera (thrips), one of the largest collections in the world is located at the University of Illinois. Involvement in the Coordinated Research Project (soybeans) has resulted in a collection of authentic insect pests of soybeans from all parts of the world. An international identification service based on these specimens is offered to anyone concerned. The world literature on soybean insect pests is being abstracted for use in a data retrieval system. More than 1,500 entries have been processed to date. The facility is being made available to entomologists and agriculturists generally.

The World Animal Agricultural program continues with one student doing doctoral research in dairy science in Thailand and another from the Department of Animal Science planning to go to Indonesia in the near future. Enrollment in the new course, World Animal Agriculture, has been very encouraging.

The Department of Agricultural Economics continues to provide assistance in the development of agricultural economics at the Uttar Pradesh Agricultural University in India. The program has leveled off at one full-time staff member plus one short-term assignment in India annually. The second U.S. graduate student is presently in India doing doctoral research under this program. Several faculty members served in India under this program during the past year.

Dr. W.N. Thompson served on a study team to evaluate the maturity of the Punjab Agricultural University in India. This is a follow-up of the USAID institution-building activity in which the College of Agriculture, particularly the Department of Agricultural Economics, has been involved.

University of Illinois/USAID contract involvement continued at a high level and full staffing during the year. There has been a breakthrough in U.S. graduate student doctoral research in the overseas programs generally. Two such positions were provided in each of the India contracts for the current fiscal year.

The Njala University College contract, at the request of USAID, was changed to a regional contract with a plan for a high level of staffing. Long-term staff positions for each India contract were reduced from eight to six this spring.

Involvement in the Indonesia (MUCIA) contract is imminent. One faculty member is committed to a short-term assignment; another will probably be committed soon. There is also a good probability that we will fill a two-year position. This is the first university direct participation since the preliminary work was carried out.

At the request of USAID, a team visited Nepal to study prospects for an institution-building contract. M.D. Thorne, Head, Department of Agronomy, served as chairman of the team. Other members of the team were Jacob Stern, Associate Professor of Vocational and Technical Education, and M.B. Russell and R.R. Renne, the Chiefs of Party of our two India contracts. A report has been submitted to USAID.

The duties and responsibilities of the Office of International Agricultural Programs are outlined in a statement, Functions of the Office of International Agricultural Programs, prepared by the College of Agriculture Policy Committee on International Programs. The statement was accepted and distributed to all faculty members. The appointment of W.D. Buddemeier as Director of International Agricultural Programs and Associate Dean, and E.R. Leng as Assistant Director of International Agricultural Programs completes the presently authorized staffing of the office. Additional staffing would be desirable to provide better technical coverage and continuity.

Faculty interest in international activities continued to increase during the past year. Student involvement in the programs has attained a new high. It is essential that additional funding be found to maintain the rate of growth experienced the past few years.

#### IV. EXPENDITURES

Expenditures from the 211(d) grant funds for the University of Illinois are presented below. No stipends for graduate students were used during the first year, but \$2,641 was used this past year. Travel expenses shown are for U. S. travel, and for the consultant visit of Dr. Moore in 1968-69 only (see footnote below). Equipment monies were used to supply the new laboratory with research equipment (see footnote below).

##### Budget Summary

Salaries	15,654	22,582	--	--	--	38,236
Stipends	--	2,641	--	--	--	2,641
Travel	1,314 <sup>a</sup>	926 <sup>a</sup>	--	--	--	2,240 <sup>a</sup>
Equipment and Supplies	8,789	13,756 <sup>b</sup>	--	--	--	22,545
Total	25,757	39,905				65,662

<sup>a</sup>This travel figure does not include the cost of international transportation of Professor Sinclair, estimated to be \$3,376.60 for two years. Upon receipt of an official advice of charges from the Grant Office, this amount will be included as an expense.

<sup>b</sup>All major items (over \$100) were purchased in 1969-70 were from U.S. manufacturers. The various items listed below were purchased for the research laboratory to be used in experiments being conducted by the 211(d) students the 211(d) Professor, and the graduate students under the direction of the 211(d) Professor.

<u>Item</u>	<u>Cost</u>	<u>Manufacturer</u>
Balance	\$ 770	Mettler Mfg. Co.
Culture cabinets (2), low temperature	1,428	Sub-zero Freezer Co.
Transfer hood	375	Air Control, Inc.
Microscopes (2), stereo research and dissecting with accessories	2,560	American Optical
Calculator	1,755	S.C.M. Corp.
Flash evaporator	345	Buchler Instruments
TOTAL	\$7,233	

A single international trip was made under the sponsorship of the 211(d) Program from December 22, 1969, through February 8, 1970.

The administrators, members of the research and teaching staff, and/or facilities of the following institutions were visited at an approximate cost of \$2,900. Particular attention was given to facilities and programs involved in research and teaching of plant pathology.

At least one, and in many cases, two seminars were given at each institution visited. Two seminars were prepared on systemic fungicides, and a third seminar was concerned with studies on G. candidum. Mr. Richard Sikora, a graduate student from the department, accompanied me on a portion of the trip and, at certain locations, gave a seminar on the soybean cyst nematode.

Hawaii (Oahu):

- A. University of Hawaii - Honolulu
  - 1. Department of Plant Pathology
  - 2. Department of Vegetable Crops
  - 3. East-West Center
- B. Pineapple Research Institute - Wahiawa
- C. Hawaiian Sugar Planter's Association - Honolulu

The Philippines:

International Rice Research Institute - Los Banos

India

- A. Indian Council Agriculture Research - New Delhi
- B. Indian Agricultural Research Institute - New Delhi
- C. Ford Foundation - New Delhi
- D. Rockefeller Foundation - New Delhi
- E. Uttar Pradesh Agricultural College - Pantnagar
- F. J. Nehru Krishi Vishwa Vidyalaya - Jabalpur
- G. Indian Institute of Technology - Kharagpur

Nepal:

- A. Department of Agricultural Education and Research - Katmandu
  - 1. Plant Pathology Section
  - 2. Entomology Section
  - 3. Agronomy Section
- B. U. S. Agency for International Development - Katmandu

Iran:

- A. Regional Pulse Improvement Project (USDA) - Tehran
- B. University of Tehran - Tehran
  - 1. Faculty of Sciences
  - 2. College of Agriculture
  - 3. Karaj Agricultural College
- C. Plant Pests and Diseases Institute -- Tehran

Lebanon:

- A. American University at Beirut
- B. Agricultural Research and Educational Center - Baalbek

Sierra Leone:

Njala University College -- Njala

The purposes for the trip were several:

- 1. To make arrangements for the first 211(d)--sponsored student to study and work at one of the USAID/UI contract universities (U.P.A.U. or J.N.K.V.V.).
- 2. To further assess the development of plant pathology at U.P.A.U., J.N.K.V.V., and I.A.R.I.
- 3. To strengthen the cooperative relationships between plant pathologists and other agriculture personnel at I.A.R.I., U.P.A.U., and J.N.K.V.V. A conference was arranged between the 211(d) Professor and Dr. Joshi. Dr. Joshi will receive his Ph.D. from the UI after submitting his dissertation on his research completed at I.A.R.I. in India.

4. To attend and participate in the annual meetings of both the Indian Phytopathological Society and the Indian Science Congress held at the Indian Institute of Technology, Kharagpur.
5. To assess the development of plant pathology and other agricultural sciences in the Department of Agricultural Education and Research at Katmandu, Nepal, and Njala University College, Sierra Leone. The University of Illinois has a USAID contract team at Njala and were asked to provide technical advice at Katmandu.
6. To gather information and materials for teaching the new course on international food crops, diseases and insects.
7. To make personal contact with colleagues and plant pathologists at various institutions to increase the competence of the 211(d) Professor in international agriculture.

The purposes of the trip were accomplished. A detailed report was filed with the proper administrators of the University of Illinois.

It is interesting to note the following quotation from an unsolicited letter written by Dr. R. S. Singh (Plant Pathologist at U.P.A.U.) on 16 May, 1970:

"Thank you very much for sending us so many things and informations after your last visit to this place. These are really useful contributions from your side to this Department and are being appreciated not only by me but all concerned. As a matter of fact, since your last visit some of my research assistants got so much interested in systemic fungicides that they immediately started working with Benlate, Vitzvax, Plantvax, RH 893m and RH 124 for seed-treatment of maize, soybean, and wheat. Some very interesting results have been obtained. They found the same (effect) of Benlate in soybean as was told by you from Thapliyal's work. Data have been obtained on seed-viability after treatment, persistence of the fungi toxicity in the plants, etc. We remember your encouragement and a real approach to international plant pathology."

## V. WORK PLAN AND BUDGET FOR 1970-71

The work plan for the remaining three years of the grant were presented in previous sections. The teaching, research, and graduate training programs, as well as the development of various competences, will continue. A trip to India is planned for December 1970-January 1971 to assess the program of the first 211(d) sponsored student at U.P.A.U. and place the second student at J.N.K.V.V. It is planned that the 211(d) Professor will participate in the 2nd International Plant Pathology Congress sponsored by I.C.A.R., I.A.R.I., and other Indian institutions. It is to be held in New Delhi during this period.

The experience gained from administering the 211(d) grant for approximately two years shows that the original allocated funds will not be sufficient to carry out all the original purposes of the grant for the remaining three years. At best, the original funding was considered minimal. At least an additional \$100,000 would be required in the next three years. There was some indication that the USAID Mission in India would provide some Rupee support to the program. It is now quite clear that every item of expense for the program will have to come out of the dollar budget of the grant, since it has been verified that this is not considered a USAID Mission Program and that the USAID Mission in India has no responsibility for the program or any means to offer Rupee support.

It was the hope of AID-Washington that 211(d) funds would be used to "seed" other campus projects related to international agriculture. It now appears that less than minimal amount of this activity can be realized because all existing funds must be used solely for support of student training. At present there are five students involved in the UI 211(d) Program, each committed to spend either six months or a year in India.

Funds for the support of ancilliary programs, such as visiting professorships, seminars, conferences, meetings with international significance, undergraduate programs, etc. are needed. Without additional funding none of these efforts can be realized.

Unless additional funding is possible, the expenditure of 211(d) funds for the next three years will go for salaries, stipends, and overseas travel.

A summary of the original University 211(d) budget was presented earlier.

If additional funding is not forthcoming, then the revised budget for 1970-1973 will be as follows:

Category	Original Budget	1968-69	1969-70	1970-71	1971-72	1972-73	Totals
Salaries	115,020	15,654	22,582	23,932	25,368	26,890	114,426
Stipends	41,400	--	2,641	9,750	16,950	8,150	37,491
Travel	13,000	1,314	2,989	5,195	7,645	6,895	24,038
Equipment and Supplies	30,580	8,789	13,756	500	500	500	24,045
<b>Totals</b>	<b>200,000</b>	<b>25,757</b>	<b>41,968</b>	<b>39,377</b>	<b>50,463</b>	<b>42,435</b>	<b>200,000</b>