AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523
BIBLIOGRAPHIC INPUT SHEET

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BATCH #16

1. SUBJECT CLASSIFICATION
A. PRIMARY: Serials — Y-AF00-1400-G690
B. SECONDARY: Agriculture--Plant production--Leguminous grains and vegetables--Iran

2. TITLE AND SUBTITLE
Progress report: July-Dec.1964

3. AUTHOR(S)
(101) USDA/ARS,Regional Pulse Improvement Project (Iran)

4. DOCUMENT DATE	5. NUMBER OF PAGES	6. ARC NUMBER
1965	7p.	ARC IR633.3.R336

7. REFERENCE ORGANIZATION NAME AND ADDRESS
USDA/ARS

8. SUPPLEMENTARY NOTES *(Sponsoring Organization, Publishers, Availability)*
(Adm.summary)

9. ABSTRACT

10. CONTROL NUMBER	11. PRICE OF DOCUMENT
PN-RAA-918	
12. DESCRIPTORS Grain legumes Iran	13. PROJECT NUMBER
	14. CONTRACT NUMBER PASA RA(AJ)3-00 Res.
	15. TYPE OF DOCUMENT

AID 590-1 (4-74)

PROGRESS REPORT

July-December 1964

Regional Pulse Improvement Project

USDA, Agricultural Research Service

US Agency for International Development.

Karaj Agricultural College, Karaj, Iran.

Government of Iran, Ministry of Agriculture

Government of Iran, Plan Organization

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Improvement Project, Karaj, Iran.

Copies of this report have been filed with:

English:

1. US Department of Agriculture, Agricultural Research Service, Crops Research Division, Office of the Director, Beltsville, Maryland. Also for distribution to other Divisions.

2. US Agency for International Development, Washington, D.C., Dr. F. Parker, Deputy Director, Office of HRSD/Agriculture, and Mr. Monroe McCown, Chief, NESA, Agriculture Branch. Also for distribution to other Missions in the NESA Region.

3. US Agency for International Development, Tehran, Iran, Mr. Reed H. Lewis, Acting Chief, Agriculture Division.

Farsi:

4. Plan Organization, Government of Iran, Tehran, Iran.

5. Ministry of Agriculture, Tehran, Iran.

6. Karaj Agricultural College, Karaj, Iran.

Introduction:

Under authority of the Foreign Assistance Act of 1961 a Participating Agency Service Agreement was signed on June 35, 1963, between the U.S. Agency for International Development and the U.S. Department of Agriculture, Agricultural Research Service, to initiate a Regional research program aimed at the improvement of pulse production in the Near East, South Asia, and Far East Regions. During October and November of 1963 a survey of research potential available in countries of these regions was performed by a team of research personnel from the U.S. Department of Agriculture. On the basis of this survey it was determined that Iran offered the best location for one of two research centers to be established in furtherance of this program. Karaj College, located 45 kilometers west of Tehran, was selected as the best site for headquarters of the project in Iran.

On May 7, 1964, the appropriate documents were signed. These included a Memorandum of Understanding between USDA/ARS, US AID. The Plan Organization, the Ministry of Agriculture, and Karaj Agricultural College, and a Cooperative Agreement between USDA/ARS, the Ministry of Agriculture, and Karaj Agricultural College. This latter document covers the agreement by the Ministry and College to supply USDA/ARS with personnel and services on a reimbursable basis.

Status and Initial Development of Program in Iran

Project Coordination and Development

A steering committee composed of one member of each of the five cooperating agencies was established. The committee consists of the following:

Prof. H. Schaybani, Head of Horticulture Department, Karaj College (Chairman).

Dr. Bagher Bayat, Plan Organization, Government of Iran.

Mr. Hossein-Ali Schaybani, Seed and Plant Improvement Institute, Ministry of Agriculture.

Dr. Karim Gudarzi, Economic Planning Division, Ministry of Agriculture.

Mr. Blair Allen, Crops Advisor, US AID/Agriculture, Iran.

Dr. Peter H. Van Schaik, Project Leader, USDA/ARS.

This committee meets about once every month to discuss overall operation of the project.

Several meetings have been held with Plan Organization officials for the purpose of presenting the project to the High Council for approval of fund appropriation for salaries of Iranian personnel (see section on Iranian staffing) and construction of a greenhouse at Karaj College.

It is anticipated that this approval will be obtained before January 1965.

Finances requested include 3,500,000 rials (approx. $47,000) for greenhouse construction and 300,000 rials (approx. $4,000) for salaries for four Iranians for the three remaining months of the Iranian year 1343 (ends March 21, 1965).

It is expected that it will take about one year to go through the several phases of preparation for and actual construction of the greenhouse.

Staffing (American)

Dr. J. Clark Ballard, Utah State University Contract team leader at Karaj College stayed in Iran for 3-1/2 months after the termination of

the University's Contract on July 1, 1964, as a consultant to the project. He handled the planting and other seasonal work on some 700 plant accessions of various pulse crops sent from the U.S. and took extensive field data on them. Dr. Ballard also took care of all other matters pertaining to establishment of the project prior to the arrival of the project leader.

Dr. Peter H. Van Schaik, Plant breeder and project leader, arrived in Iran on August 21, 1964.

Other staff to arrive in Iran in the near future include:

Mr. Kenneth E. Gibson, Entomologist.

Dr. Glen Horner, Agronomist.

Mr. Don Schmidt, Assistant plant breeder.

Staffing (Iranian)

Professional

Under the terms of the Memorandum of Understanding the Plant Organization of G.O.I. will provide funds for four professional personnel as research associates to work with USDA personnel. Because of the difficulty in finding personnel with advanced training and experience who are not already employed and have seniority status within the Ministry or other Government Agencies, the following alternative was agreed upon:

Karaj Agricultural College will assign to the project from its staff four senior associates. These men will be associated with the American staff on a full-time basis except that they will retain their teaching responsibilities.

The Plan Organization will provide funds for four junior associates, graduates from Karaj Agricultural College, with very little if any experience.

Subprofessional

Two field laborers have been employed since July 1, 1964, to take care of weeding, cultivating, harvesting, threshing, and cleaning of seed.

Two drivers, formerly employed by the Utah State University Contract Team, were taken over for the project on July 1, 1964.

Progress in Research

Although at this early stage of the program no specific research accomplishments can be cited, a good start was made in the 1964 season

under the supervision of Dr. Ballard. Following is a summary of plantings made at Karaj College in 1964. Although harvest is finished, threshing, cleaning, and weighing of seed and evaluation of the data will not be completed for some time.

Chick peas (Cicer arietinum)

1. Progenies of 105 plant selections made in 1963 from a white chick pea population, seed for which was obtained on the local market. Notes were taken on plant type, fruiting habit, flower color, pod shape and size, disease reaction, (primarily mosaic and Fusarium root rot), and seed was harvested for preliminary estimates of yielding ability.

2. A total of 32 plant introduction accessions obtained from the New Crops Research Branch of USDA/ARS and five from the Oklahoma Agricultural Experiment Station (Dr. Ralph Matlock).

3. Small populations of 35 local types gathered from all chick pea growing areas of Iran. Plant selections were made from these.

4. A one-acre bulk planting of a local type. This plot showed severe Fusarium root rot and 16 plant selections were made which showed tolerance.

5. Small preliminary trial to check the effect of Rhizobum bacterial inoculation. Under the conditions of this trial inoculation was equally good on treated and untreated plants. There were no differences in plant development or in yield.

Broad beans (Vicia faba)

Fifteen varieties and strains of broad beans, obtained from various sources in Iran, were planted in single rows for observation.

Mung beans (Phaseolus aureus)

1. A total of 194 plant introduction lines were planted. Seed for 192 of these was supplied from the Regional Plant Introduction Station in Experiment, Georgia, and two came from the Oklahoma State Experiment Station.

The one outstanding line of all these was P.I. 31569. It was very early, showed no mosaic, had an excellent medium erect plant type, and was extremely prolific in pod set. It, along with several others, will be tested extensively in 1965.

2. Nine varieties from various parts of Iran, supplied by the Ministry of Agriculture, were planted in single rows. Two of these, Rasht No. 241 and Mishapour No. 238, showed excellent performance.

Shattering of seed posed a considerable problem in mungbeans. To reduce seed loss all plots were hand picked several times.

Fusarium root rot developed rather severely late in the season, when the first mature pods were naturally turning brown. Without pulling plants out of the ground it was difficult to distinguish between normal maturity and disease reaction in many cases.

Urd beans (Phaseolus mungo)

Forty-three Plant Introduction Accessions from the New Crops Research Branch of USDA/ARS were planted. In general urd beans were much less vigorous and prolific and later maturing than mung beans. None of the lines showed any real adaptation and promise.

As in mung bean shattering of seed was a serious problem. Fusarium root rot also developed rather severely on urd beans.

Cowpeas (Vigna sinensis)

A total of 325 accession lines (8 from Oklahoma, the rest from the New Crops Research Branch, USDA) were grown for evaluation in 1964. Notes were taken on vine type, flower color, pod type, disease reaction (mosaic), and maturity.

Snap and dry beans (Phaseolus vulgaris)

Eighty varieties and strains of beans, obtained from local sources and the Ministry of Agriculture, were evaluated. These included Iranian named varieties as well as some from Europe and America.

Moth beans (Phaseolus aconitifolius)

Nine accessions obtained from the New Crops Research Branch, USDA, were planted.

Vigna species

Two accessions listed as Vigna species (one from Nigeria, one from Mexico), 7 accessions of Vigna cylindrica, and 3 of Vigna sesquipedalis were grown. These will be planted again in 1965 for further evaluation and possible identification.

Dry peas (Pisum sativum)

Twenty-three varieties of dry peas, obtained from the Ministry of Agriculture, were grown. Notes were taken on vine type, flower color, pod size, and shape, mosaic reaction, and maturity. Considerable damage was done to the seed, both in the field and after harvest, by pea weevil.

Lentil (Lentilla lens)

About 68 plant selections were made in a bulk planting of a local lentil variety. These will be progeny tested in 1965.

Selection was based primarily on plant type, seed size, and freedom from Fusarium root rot.

Fenugreek (Trigonella foenumgraecum)

Three accessions, originating in Afghanistan, and obtained from the New Crops Research Branch, USDA, were grown.

Pigeon peas (Cajanus cajan)

Two pigeon pea lines from Oklahoma and five obtained from the New Crops Research Branch, USDA, were planted. Pigeon peas are not now grown in Iran and it's doubtful that they will have a place in this region. These lines were very late; first flowers appeared on August 23, and there was very little mature seed at the time of first frost.

General Observations

The program has been well received in Iran. Karaj Agricultural College is extending full cooperation. It is quite evident that College officials would like to view this project as the successor to the Utah State University Contract which terminated July 1, 1964. Requests to give lectures, assist in translations, advise on library acquisitions, etc., have been made to the project leader.

Excellent cooperation has been extended by the US AID/Iran Mission. It became quite evident soon after activation of project operations, however, that there had been insufficient communication between AID/W. and the Iran Mission. The Mission Executive Office, Comtroller's Office, Personnel Office, and Agriculture Division had little knowledge of the project and did not know how it was to be operated and administered within the Mission. This has lead to several problems which have taken a considerable amount of unnecessary time and effort to solve. It is strongly recommended that a permanent line of communication be set up between USDA/ARS, US AID/W. and US AID/Iran and that certain people be designated in each organization.

As a result of acute financial problems of Karaj College, the payment of salaries to subprofessional and non-professional help on a reimbursable basis, as arranged for in the Cooperative Agreement, has created a problem. It is hoped that, as the program develops and requirements for personnel under this Agreement become greater, this will not lead to serious difficulties or an alternate solution may have to be found.