

INVITATION

The International Center for Agricultural Research in Dry Areas (ICARDA) is offering opportunities to conduct thesis research in ICARDA research projects as part of their MSc or PhD degrees. The graduate thesis research opportunities are specially designed for young researchers from developing countries. Eligible applicants should be enrolled at universities. They will have the opportunity to conduct all or part of their thesis research work at ICARDA research projects under the joint supervision of the involved university and ICARDA scientists.

this brochure presents information on the specific objectives for this program, its content and how to apply. Application forms will be enclosed with brochure or attached in email messages. The brochure and application forms can also be accessed from ICARDA's web site www.icarda.org

Program Objectives

ICARDA has high interest in training future scientists from the developing countries. Therefore, it is important that national research programs, ministries of agriculture and regional universities have a continuing supply of highly trained scientists capable of carrying over these important tasks. In addition, ICARDA hopes that the graduate research program will strengthen ties between the Center and both the research institutions and universities.

Graduate Research Themes

The topics that graduate students can choose from

Topics for Doctor of Philosophy (Ph.D.) studies

Biodiversity and Integrated Gene Management

- Genetic analysis of drought tolerance in chickpea: Quantitative trait loci mapping and evaluation of recombinant inbred lines.
- Phenotypic and genotypic analysis of an AB-QTL mapping population in barley.
- Genetic analysis of drought tolerance in lentil: Quantitative trait loci mapping of recombinant inbred lines.
- Development of molecular markers for resistance to chickpea leaf miner and study the role of oxalic acid and malic acid in resistance to this pest.
- Survey of important seed-borne diseases in major production regions and sample seed from formal and informal sources and quantify percent and level of infection of seed-borne diseases of legumes (e.g. chickpea)
- Study the diversity of one of the major diseases using molecular tools take one of the major disease and look in detail to the diversity of the pathogens using molecular techniques (e.g. Aschochyta blight of chickpea)
- Study different detection methods (seed health testing methods) Use different seed testing techniques to identify the best one to detect the pathogen
- Quantifying seed to plant transmission of the major diseases Carry out seed to plant transmission levels under green house/field conditions to establish a threshold for seed certification or seed treatment

Integrated Water and Land Management

- Watershed management
- Improving agricultural water productivity
- Managing salinity in agriculture
- Drought and climate change

Social Economic and Policy Research

- Environmental impact assessment
- Market analysis including commodity value chain analysis

Diversification and Sustainable Intensification of Production Systems

- Accelerating genetic improvement in indigenous sheep breeds of Morocco and Tunisia through the use of breeding values
- Assessment of the contribution of rangeland productivity and animal behavior to improve smallholder livestock efficiency in dry areas: case study in the Syrian Badia

Topics for Master of Science (MSc.) studies

Biodiversity and Integrated Gene Management

- Genetic variation and inheritance of ODAP content in *Lathyrus*
- Evaluation of Heterosis Effects for Drought and Cold Tolerance in Faba Bean
- Cytogenetic analysis of interspecific hybrids in wheat
- Roles of root traits and moisture stress on fusarium wilt resistance in chickpea
- Improving abiotic stress resistance in wheat by Agrobacterium-mediated transformation: establishment of a wheat transformation system

Integrated Water and Land Management

- Modeling watershed response to soil and water conservation practices in dry areas

Social Economic and Policy Research

- Policy impacts on NRM
- Gender and social analysis for improving household income and more sustainable NRM
- Analysis of vulnerability to livelihoods in the dry areas under increasing frequency of droughts

Diversification and Sustainable Intensification of Production Systems

- Conservation agriculture in CWANA
- Spatial and temporal behavior of Awassi sheep grazing the Badia rangelands
- Developing methodologies to assess and monitor rangeland degradation at the community level

Terms of the award

Under the terms of ICARDA graduate research program, the graduate student has access to research facilities and receives financial support to cover direct costs for a maximum of **12 months (M.Sc.)** or **24 months (Ph.D.)**. Awards include allowances for covering the costs of housing accommodation, a monthly stipend in Syrian currency, health and accidental insurance, economy class round-trip air or surface travel, local transportation. However, ICARDA's award does not cover dependent travel, university tuition or fees, and any other costs incurred by the graduate student. ICARDA requires the student to submit regular progress reports and two copies of the completed thesis. Candidates eligible for the graduate awards should not exceed 40 years age.

Application Process

The application should be written on the special form (The application form is enclosed with the brochure or attached to email messages or found at www.icarda.org). It should include a recent photograph and required documents (University registration and research proposal). Please be informed that in some countries the application should be approved by an official nominating authority.

Selected candidates will be notified by email or fax. Once accepted, applicants must confirm participation. An invitation letter will be sent out, containing additional information on the program and practical arrangements.

Cost of Participation

Funds are available from the Arab Fund for Economic and Social Development to cover all costs for Applicants from Arab countries. Institutions from other developing countries may opt to fund candidates in this program. ICARDA will be glad to provide costing information to whoever is interested to support candidates.

Contact Information

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ICARDA's Graduate Research Training Opportunities



International Center for Agricultural
Research in the Dry Areas