International Center for Agricultural Research in the Dry Areas
ICARDA, P.O. Box 5466, Aleppo, Syria

Borlaug Young Scientist Award in Wheat Improvement Research

Background on Norman E Borlaug

As a young Rockefeller Foundation scientist in the mid-20th century, Dr Norman E Borlaug developed high yielding varieties of wheat that took Mexico from near-starvation to food self-sufficiency within a few years. A decade later, when India and Pakistan suffered wide scale hunger and even famine, he introduced his new wheat seed and production technologies into the Asian Subcontinent and successfully campaigned at the highest level of government to get policy changes that averted famine in the mid-to-late 1960s. In response to the combination of his scientific and humanitarian achievements, the Nobel Committee awarded Norman Borlaug the Nobel Peace Prize in 1970.

That was only the beginning of his remarkable accomplishments. Since 1970, for example, Norman Borlaug has made a number of trips to China, where his technology, his policy suggestions, and his training of young Chinese scientists helped alleviate hunger in that country of 1.3 billion people. In the Southern Cone of South America, the early maturity of his Mexican wheats permitted double cropping of wheat and soya beans, with tremendous increases in production. For his technology and for his humanitarian efforts, he is revered in many countries throughout Asia, Middle East, Latin America and Africa.

Since 1986, Norman Borlaug served as President of Sasakawa Foundation in Africa where, in spite of AIDS, endemic malaria, and other maladies, populations are increasing faster than food production. Norman Borlaug showed untiring efforts to relieve their hunger in Africa.

Norman Borlaug›s scientific achievement have saved hundreds of millions of lives and earned him the distinction of one of the 100 most influential individuals of 20th century.

The International Center for Agricultural Research in the Dry Areas (ICARDA)

Established in 1977 as an autonomous, non-profit, international research center, ICARDA is one of the 15 international research centers supported by the Consultative Group on International Agricultural Research (CGIAR), which is co-sponsored by the World Bank, the Food and Agriculture Organization of the United Nations, the International Fund for Agricultural Development (IFAD), and the United Nations Development Program. ICARDA's mission is to contribute to the improvement of livelihoods of the resource-poor in dry areas by enhancing food security and alleviating poverty through research and partnerships to achieve sustainable increases in agricultural productivity and income, while ensuring the efficient and more equitable use and conservation of natural resources. With its main research station and headquarters in Aleppo, Syria, and a staff of over 500 scientists and support personnel, ICARDA works through a network of partnerships with national agricultural research systems (NARS), regional and international institutions, universities, advanced research institutes, and non-governmental organizations. In addition to its headquarters programs, ICARDA operates throughout the non-tropical dry areas through regional programs and country offices.

ICARDA's wheat improvement program

Wheat is the principal food source for the majority of the population in Central and West Asia and North Africa (CWANA) region where average consumption is more than 185 kg/capita/year, the highest consumption in the world, accounting for 45% of the region's per capita calorie intake. However, wheat productivity and total wheat production in CWANA is generally low due to several abiotic and biotic stresses that limit production. Thus many countries in the region are substantial net importers of wheat, and from the point of food security wheat is a crucial crop in CWANA. The area grown to wheat in the region covers in excess of 53 million hectares.

The goal of the wheat program is enhancement of productivity and production sustainability of the wheat cropping systems in the CWANA region. This is aimed at the development, in collaboration with NARS in the CWANA region, of improved wheat varieties with high and stable yield, and better grain quality, resistant/tolerant to biotic and abiotic stresses, adapted to targeted agro-climatic zones.

ICARDA's collaboration with national programs in the CWANA region encompasses a research continuum, from genetic resources conservation to their utilization in wheat improvement programs and subsequent provision to farmers. This applied research program has a strong focus on producing alleviating production constraints including abiotic stress (drought , terminal heat, cold, and salinity) and biotic stresses - Rusts (e.g. stripe, leaf & stem), root-rots, and insect pests (e.g. Russian wheat aphid, Sunn pests, and Stem sawfly)

The breeding strategy is underpinned by

1. Continuous evaluation of potential parents.
2. Targeted crossing program using wild relatives, synthetics and CWANA adapted cultivars.
3. Multi-location testing and selection.
4. Targeted distribution of improved germplasm to national programs in the region as international public goods where they are evaluated and potentially selected as preferred germplasm for release.

The breeding work is supported by strong research units in genetic resources, pathology, virology, entomology, biotechnology and seed systems. In recent years, research in gene discovery, allele mining, QTL mapping, association analyses, and genome wide selection for abiotic and biotic stresses in wheat have increased. Marker-assisted-selection (MAS) has been utilized to enhance the breeding efficiency and incorporation of important agronomic traits including stem rust and Hessian fly resistance into locally adapted elite germplasm.

The Borlaug Young Scientist Award in WheatImprovement Research

ICARDA has established the "Borlaug Young Scientist Award in Wheat Improvement Research" in tribute to Dr Norman E Borlaug's legacy. The award is intended to further encourage advances in wheat improvement research by the national agricultural research programs in the dry areas.

The Award

The award has the following particulars:

1. The Award announced annually will provide full support to a young scientist to spend 4 months working with ICARDA's Biodiversity and Integrated Gene Management Program at its headquarters and principal research station in Aleppo, Syria. The award includes travel, full stipend, accommodation, bench fees and insurance cover.
2. The Award will provide full support to a research project to be undertaken by the young scientist that targets any aspect of wheat improvement, including both field and laboratory related activities in genetic resources conservation, management and utilization, breeding, biotechnology, pathology, entomology, virology, quality, and seed systems and seed health.
3. The scholarship should aim at both bio-physical outcomes (more resistant lines identified, marker-associated with trait, IPM methodology compared, etc.) and publication of the results in a refereed journal. The successful candidates are expected to work with ICARDA scientists and to publish the results of their research in an internationally recognized and refereed journal.
4. The Award will be open to young scientists globally including students in the final year of their agricultural degree or related disciplines and young scientists who already have a degree (BSc) are just starting out in their work with their National Programs, and are seeking a career in wheat improvement.
5. Applicants for the award will be required to submit a brief description (2-page maximum) of the research project they would like to undertake at ICARDA, together with their CV/resume and a letter of application.
6. A panel of five renowned experts in wheat improvement will select the best candidate based on merit.

On behalf of ICARDA, I invite you to nominate qualified candidates to be considered for this award.

Inquiries and nominations should be addressed to

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ICARDA is an equal opportunity organization and encourages applications from women.