Food Legume Improvement and Development

Proceedings of a workshop held at The University of Aleppo, Syria, 2-7 May 1978

Geoffrey C. Hawtin and George J. Chancellor, Editors

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The Role of IDRC in Food Legume Improvement Research

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The importance of food legumes, particularly in the diets of the poorer and less well-nourished people of the world, is a well-established fact. In most of the developing countries, most of the poorest people, especially in the rural areas, derive perhaps 75% or more of their nutritional requirements, in terms of calories and protein, from plant sources. The cereal and pulse crops dominate in this respect and, in their protein supply, complement each other well in human nutrition.

In spite of their very significant role in human nutrition, their ability to survive and yield under extremely marginal conditions, their contribution to crop rotations, and their nitrogen-fixing capacity, little emphasis or importance has been attached to the improvement of food legume crops by the agricultural scientific community in the past, the cereal crops being the main focus of research and development efforts. It is thus hardly surprising that world cereal production is currently increasing at a much more rapid rate than the production of legumes. In fact available statistics indicate that during the past 20 years per capita legume production in Asia and Africa has been declining while cereal consumption has increased. The improvement of only one component of these two complementary staple food crops, at the expense of the other, to a certain extent suggests that the nutritional quality of the diets of the poorer sections of the population of this region may be deteriorating.

Recognizing this situation, the International Development Research Centre (IDRC) is working toward the correction of this imbalance through the encouragement and support of research designed to develop legumes capable of giving higher yields combined with improved nutritional quality, in the major producing regions of the semi-arid tropics and West Asia.

Since its inception in 1972, the Pulse Improvement Program of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), based in Hyderabad, India, has received active support from the Centre. Breeding and selection of lines of chick-pea and pigeon pea at ICRISAT is geared toward achieving higher and more stable yields together with higher protein content and resistance to diseases, pests, and other stressful conditions. Thousands of different lines of these two crops have been collected from all over the world and a very active improvement effort is now fully under way.

Other IDRC-supported food legume research projects are under way in the West Indies, Kenya, and Sri Lanka, and a network of cowpea improvement efforts is currently being initiated in West Africa, involving several countries, and the International Institute for Tropical Agriculture (IITA).

In West Asia, IDRC was instrumental, in cooperation with the Arid Lands Development Program of the Ford Foundation (ALAD), in the setting up of a regional food legume program. This was expanded with the formation of ICARDA into an international effort focusing upon lentil, broad bean, and chick-pea improvement. In coordination with ICARDA, a network of national pulse improvement programs involving Algeria, Sudan, Egypt, Syria, and Turkey is being built up at the present time. This development is in line with the IDRC philosophy manifest in all its programs that indigenous scientists should be encouraged and assisted to develop their own national research competence with the technical backup and assistance of the international research community embodied in the international research centres.
With this approach, IDRC attempts to bring together the legume research efforts of the developing world on the national, regional, and international levels into a coordinated and cooperative endeavour to improve the production of food legume crops and through them the nutrition of the world's population. The fast-developing relationship between ICARDA and the national pulse programs of West Asia and North Africa, and the new links in the chain of this cooperation that are continually being forged, provide a good example of the ways in which research efforts on all levels should work together toward their common aim. In this way research can make a real and lasting contribution to the alleviation of the hunger and hardship that exists in the world today.