



Portugal & CIMMYT

A Sustainable Partnership for Progress

Few countries have understood and appreciated CIMMYT's mission better than Portugal, which has a long tradition of collaborative research with CIMMYT and provides significant financial support to the Center (US\$ 500,000 in 1997). The foundation of this understanding was shared fieldwork, first in Mexico and later in Portugal itself.

A Scientific Commitment...

Portuguese scientists have taken a strong interest in CIMMYT's research from the beginning. Dr. Manuel Barradas, Wheat Director of the Estação Nacional del Melhormento de Plantas (ENMP), Elvas, and later the Director General of INIA, was the first Portuguese visitor to CIMMYT. He was instrumental in releasing Mexicano 1481 in Portugal – *the first CIMMYT-related wheat released in Europe*. Dr. Francisco Bagulho, Director of ENMP, also traveled to CIMMYT as a visiting scientist. Many other researchers would follow in their footsteps.

...Leads to a Regional Presence

This productive exchange of research ideas through visiting scientists fostered an even more active research partnership. From 1980 to 1985, Portugal hosted one of CIMMYT's earliest and most ambitious regional programs. The North and West Africa and Iberia Regional Program conducted research on wheat, barley, and triticale in two distinct agroclimatic regions – the Mediterranean Basin and West Africa. Eventually the program had two full-time staff, who established links with 19 countries as well as the International Center for Agricultural Research in the Dry Areas (ICARDA). In the year that the regional program came to an end, CIMMYT's Dr. George Varughese, who had been posted to Portugal since 1980, was awarded the Agricultural Merit Grade "Comendador" by the Presidency of Portugal.

Essentially, the regional program strengthened national research programs by supplying germplasm and technical support, offering short-term training, and providing equipment. Special breeding priorities included disease resistance research on septoria, fusarium, helminthosporium, and the three rusts. In addition, breeders developed wheat and barley cultivars capable of tolerating two serious constraints — drought and heat. Special training courses, especially in cereal diseases, attracted researchers from throughout the region. The achievements of many national programs can be traced to these early partnerships.

Research Collaboration on Many Fronts

Portugal's openness to new research results and forms of collaboration is valued by CIMMYT. Even before the regional program was established, Portugal participated in the international exchange and improvement of wheat, barley, and triticale germplasm. Since 1973, Portugal has received 519 nursery sets from CIMMYT. At least 15 bread wheats, 12 triticales, 7 durum wheats, and 1 barley cultivar of CIMMYT origin have been approved for release over the years.

Just as Portugal was the earliest European country to recognize the value of CIMMYT wheats, Portugal also perceived the potential of triticale much earlier than many other countries, and our collaboration on triticale deserves special mention. Triticale was first cultivated in Portugal in 1979. By 1991-92, Portuguese farmers were growing an estimated 90,000 ha of triticale. As Dr. Bagulho and colleagues reported at the 2nd International Triticale Symposium, "Triticale is a very important crop in southern Portugal, an area characterized by irregular climatic conditions, acid soils, and low fertility. Five varieties developed by ENMP, selected in CIMMYT germplasm, are included in the National Catalogue. They occupy most of the triticale area in Portugal.... Today, in this region, triticale competes with traditional cereals in traditional cereal farming systems, following wheat in many rotations or instead of oats in marginal soils."

A total of 25 Visiting Scientists have now come from Portugal to CIMMYT headquarters in Mexico, and nine other researchers have participated in training courses. The training links, like the links in crop improvement research, continue to this day; a recent course in our Applied Biotechnology Center was attended by a Portuguese researcher.

Other International Links

A less direct link with Portugal is CIMMYT's continued commitment to areas of the world that historically were important to Portugal. For example:

- ◆ **Brazil** — A highly successful, long-term breeding program between Brazil and CIMMYT has resulted in the release of more than 150 acid- and aluminum-tolerant wheat varieties in Brazil over the past 15 years. These varieties yield better than local materials and also show better quality characteristics.
- ◆ **Angola** – The Portuguese brought maize to Africa in the 16th century, and today it is a major staple in many parts of sub-Saharan Africa. In Angola, where maize is grown on 1 M ha, average yields remain low – 0.3-0.4 t/ha, compared to a regional average of 1.2 t/ha. For many years, internal conflicts prevented Angola from realizing the benefits of improved germplasm. Now, however, CIMMYT sees strong opportunities for working with Angola's active maize breeding program to rebuild national maize research capacity, improve maize germplasm, and build on links between the national program, CIMMYT, and NGOs working with maize seed distribution and agricultural development.

Toward New International Impacts

CIMMYT's research focus is to improve the productivity, profitability, and sustainability of maize and wheat systems in poor countries, while protecting the natural resources upon which agriculture is based. By supporting our research and sharing our commitment to new research opportunities, Portugal continues to ensure that the benefits of our work are felt throughout the world.