HOW THE RESEARCH WAS DEVELOPED

A Chronology

1942 – Rapeseed is introduced to Canadian farmers as an oil crop.

1950s – Research is carried out to make rapeseed a safer food source.

1957 – Canada’s first edible rapeseed oil is extracted.

1974 – Rapeseed is genetically altered to produce canola.

1985 – IDRC-funded research begins on developing new B.t. strains.

1986 – IDRC supports cooperative research on canola breeding.

WHAT IS IDRC?

Through funding of scientific research in Africa, Asia, Latin America, the Caribbean, and Canada, the International Development Research Centre (IDRC) helps communities in the developing world find solutions to problems related to health, technology, food, social and economic policy, information and communication, and the environment. Created by the Parliament of Canada in 1970, IDRC supports research projects that address the challenges of sustainable and equitable development.

Science in ACTION

is a brochure series profiling IDRC projects worldwide. IDRC-funded research uses science and technology to help identify practical, appropriate solutions to problems in developing countries.

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CANOLA
Canadian Success Story

Making Canola Even Better

Collaboration among Canadian, Chinese and Egyptian researchers has led to breakthroughs which will improve canola production in Canada and China, and increase production of soybean and groundnuts in Egypt.

A "Win-Win" Situation – A Tale of Two Projects

In one IDRC-funded project, agricultural researchers in Canada and China teamed up to improve the crop quality of canola. Researchers from the Canola Breeding Program, University of Manitoba and from China’s Crop Research Institute participated in this project. The initial IDRC-funded collaboration between Canada and China has evolved – thanks to the initiative of the researchers themselves – into a strong cooperative working arrangement achieving further impressive results (see Value of International Collaboration, opposite page).

And in a second IDRC-funded project, Egyptian and Canadian researchers developed a new, safe biological pest control agent, through the joint efforts of Egypt’s National Research Centre and the Agriculture Canada Research Station, Winnipeg.

Benefits to Canada

- Germplasm from Chinese rapeseed varieties has been bred into Canadian canola varieties to increase canola’s resistance to stem rot and root diseases.
- Canadian canola production has benefited from the development of a new natural pesticide (called B.t.) which controls canola crop pests such as Bertha armyworm, yet is safe for people and the environment.

Benefits to China

- Existing Chinese varieties of rapeseed are high in two undesirable substances: erucic acid, which can be harmful to humans, and glucosinolates, which are harmful to animals. Canadian breeders have developed rapeseed varieties that are low in both these substances. With rapeseed as China’s second most important oilseed crop and an important livestock feed, improving its quality in this way is important to agriculture in that country.

Benefits to Egypt

- The effective biological pest control agent which is protecting Canadian canola crops against Bertha army worm is also being used in Egypt against pests which attack soybean and groundnuts, two important cash crops. Canadian-Egyptian research developed several new strains of B.t., a bacterium which is harmful to certain insects but not toxic to people, animals or the environment. The new B.t., strains had to be developed specifically for each country’s climate, environment and insect species. Egypt is hoping to produce large quantities of B.t. on a commercial scale, which will result in savings on pesticide imports and will create new B.t. industries in the country.

What is Canola?

Canola is a uniquely Canadian variety of rapeseed. It is low in the two undesirable substances (erucic acid and glucosinolates) found in other varieties of rapeseed, which make it highly desirable as a safe, nutritious food source.

Canola Facts

- All of Canada’s rapeseed is canola.
- Canada’s canola crop is worth $1 billion.
- Canada is the world’s second largest producer of rapeseed.

With IDRC assistance Canadian canola is now going global. In addition to the work in China and Egypt, IDRC has supported research to adapt canola to growing and processing conditions in India and Ethiopia.

Value of International Cooperation

A group of Canadian and Chinese scientists began working together in 1986 as part of an IDRC-funded research project on canola. Over the years, trust and understanding between the two groups of scientists built up. This in turn made possible the exchange of germplasm. Lately, the ongoing China-Canada collaboration has led to the development of a new canola hybrid seed which will be available to Canadian farmers in 1995.

This new canola hybrid will provide yield increases of up to 15%. Other improved varieties resulting from access to Chinese varieties of rapeseed will also be available to the rapidly expanding Canadian canola industry in the coming years. These varieties will be resistant to some of the main diseases affecting canola and will also have shorter growth cycles.