

Dr R. Keith DOWNEY

O.C., Ph.D., D.Sc., LL.D., F.A.I.C., F.R.S.C.
Sr. Research Scientist Emeritus

Agriculture and Agri-Food Canada, Saskatoon Research Centre,
107 Science Place, Saskatoon, Saskatchewan S7N 0X2

born January 26, 1927

Biographical Data

Education:	Course	Degree	Year
Institution			
University of Saskatchewan	Major - Field Husbandry	B.S.A.	1950
University of Saskatchewan	Major - Field Husbandry	M.Sc.	1952
	genetics		
Cornell University	Major - Plant Breeding	Ph.D.	1961
	genetics		

Relevant Professional Experience:

Dates	Position	Employer	Location
1993 - present	President, Canoglobe Consulting Inc.	Self-employed	Saskatoon, SK
1993 - present	Sr. Research Scientist Emeritus	Agriculture Canada	Saskatoon, SK
1981 - 1993	Assistant Director and Head, Oilseed Section	Agriculture Canada	Saskatoon, SK
	Acting Director	Agriculture Canada	Saskatoon, SK
1979 - 1981			
1965 - 1979	Research Scientist	Agriculture Canada	Saskatoon, SK
1957 - 1965	Research Officer	Agriculture Canada	Saskatoon, SK
1951 - 1957	Technical and	Agriculture Canada	Lethbridge, AB

Awards : Year Award Organization

1963 Bond Gold Medal American Oil Chemists' Society
1968 Public Service Merit Award Government of Canada
1971 Honorary Life Membership Canadian Seed Growers' Association
1973 Grindley Medal Agriculture Institute of Canada
1975 Honorary Life Membership Saskatchewan Rapeseed Growers' Association
1975 Royal Bank Award Royal Bank
1976 Officer, Order of Canada Government of Canada
1976 Fellow Agriculture Institute of Canada
1977 Queen's Silver Jubilee Medal Government of Canada
1979 Fellow Royal Society of Canada
1982 Century Saskatoon Award City of Saskatoon
1986 Distinguished Graduate Award University of Saskatchewan, College of Agriculture
1990 Gold Medal co-recipient Professional Institute of Canada
1992 Commemorative Medal for 125th Anniversary of Canada Government of Canada
1994 Honorary Doctor of Science University of Saskatchewan
1994 Clark-Newman Award Canadian Seed Growers Association
1995 J. Mcansh Award Canola Council of Canada
1995 Eminent Scientist Award / Groupe Consultatif International de Recherche sur le Colza
1995 Médaille Chevreul / Association Francaise pour l'Etude des Corps Gras, France
1996 Hall of Fame Saskatchewan Agriculture Hall of Fame
1997 Honorary Doctorate of Law University of Lethbridge
1997 Recognition Award Canadian Seed Trade Association
2000 Honorary Life Membership Saskatchewan Agriculture Graduates Association
2002 Canadian Agriculture Hall of Fame
Queen's Jubilee Medal . Government of Canada

Memberships on Committees, Boards and Advisory bodies :

Past President, Canadian Society of Agronomy
Past President, Saskatchewan Institute of Agrologists
Past National Director, Agricultural Institute of Canada
Past Member, National Advisory Board on Science and Technology
Board Member and Past Vice-President of the Groupe Consultatif International de Recherche sur le Colza (GCIRC)
Past Chairman of the Plant Breeders' Committee of the GCIRC
Board Member of the International Crop Science Congress Organization
Scientific Advisor to National Canolab Project
Past Manager-Advisor to IDRC Brassica Improvement Programs in China, India and Ethiopia
Manager-Advisor to Canadian Co-operative Association Brassica Improvement Program in India
Member, Canola Council of Canada Agronomy Committee
Past Adjunct Professor, Crop Science Department, University of Saskatchewan
Past Chairman of the Plant Breeders' Committee of the Canadian Seed Growers Association

Research :

Areas of research include plant breeding, genetics, fatty acid biosynthesis, biotechnology Published over 200 scientific and technical papers relating to *Brassica* oilseeds and breeding techniques, several

book chapters on oilseed crop improvement and co-edited the book "Oil Crops of the World" published by McGraw Hill. His research established the mode of inheritance of oilseed fatty acids and elucidated the fatty acid biosynthetic pathway in oilseeds. He has been instrumental in bringing about major changes in the nutritional quality and customer acceptance of oil and meal from *Brassica* oil crops through the identification of the first low erucic acid and low glucosinolate materials in *B. napus* and *B. rapa* and the first low glucosinolate *B. juncea* strains. He also developed the first low erucic varieties in both species and the first double low (canola quality) *B. rapa* variety.

He is the breeder or co-breeder of an alfalfa variety, 13 rapeseed/canola (*B. napus* and *B. rapa*) varieties and five condiment mustard cultivars. Many of these varieties have dominated (>90%) of the 8-14 million acre Canadian production area. In recent years he has been active in the development of improved canola varieties through the use of genetic engineering, the development of pollen control systems for hybrid production and in the development of regulations for the commercialization of genetically modified organisms.

Teaching/Training:

As an Adjunct Professor in the Department of Crop Science and Plant Ecology has supervised over 30 MSc. and PhD graduate student programs and is frequently called upon to lecture. In addition, he has supervised the research work of over 40 visiting scholars and post docs from developing countries.

Administration:

From 1970 through 1979 was Oilseed Project Manager responsible for all aspects of oilseed research at the Saskatoon Research Station. Named Assistant Director in 1973 and appointed in 1974 to a year long Agriculture Canada national task force to introduce a systems approach to national management of the Canadian agriculture sector. In 1979 appointed Acting Director of the AAFC Research Station, Saskatoon with an operating budget of over \$4 million and a staff of 42 scientist and 61 support personnel. In 1981 elected to return to research as Head of the Oilseed Section consisting of 14 Research Scientists and some 26 support personnel. Retired from AAFC Research Centre in July of 1993 but continues research and graduate student supervision as a Emeritus Research Scientist and Adjunct Professor. In addition operates his own consulting company, Canoglobe Consulting consulting for such companies as AgrEvo, Cargill Foods and InterMountain Canola, Dow AgroScience, Svalof Weibull, Monsanto, Canadian Cooperative Association and others. Also, he has just completed serving on the Prime Minister's National Advisory Board on Science and Technology.

International Activity:

His involvement in international technical assistance projects and trade missions has been of long standing, beginning with a technical mission to Japan in 1968 followed by a two month technical assistance project in Chile in 1969. Since that time he has continued to travel extensively and consulted on *Brassica* and oilseed breeding, quality evaluation, germplasm resources, plant research, biotechnology and commercial oilseed processing. At least one technical assistant mission has been made to Chile, Pakistan, India, China,

Egypt, Ethiopia, Spain, Poland, Argentina, the United Kingdom, the USA and Australia on behalf of organizations such as IDRC, UNDP, OAS, CIDA, the World Bank, USDA and the Governments of Canada and Australia and local government agencies. These activities have led to the collaboration with many scientists around the globe.

Professional Service: Served on numerous committees for a variety of organizations, some examples are:

Saskatchewan Institute of Agrologists - President (1968-69)

Agricultural Institute of Canada - National Director (1970-72)

Canadian Society of Agronomy - President (1968-69)

Professional Institute of Public Service - Provincial Rep. to National Body, Branch Pres.

Canadian Seed Grower's Association

Chairman - Plant Breeders Committee 1972-1995

Chairman - Policy Committee 1977-1988

Member - Research Committee 1980-1995

Group Consultatif International de Research sur le Colza

Vice-president 1988-93

Co-Chairman - 8th International Rapeseed Congress. 1991

Past Chairman International Rapeseed Breeder's Committee (1975-1995)

OECD

Canadian Advisor re Schemes for the Varietal Certification of Seed Moving in International Trade.

Canadian Delegate re Regulations Governing Genetically Modified Plants.

Canola Council of Canada

Technical advisory on many missions to over 20 countries world wide.

Member of the CCC's Agronomy and Research Committees.

Chairman of the annual Canola Industry Meeting.

Plant Breeding Abstracts

Member - Editorial Advisory Board

Plant Varieties and Seeds

Past Member - Editorial Advisory Board

International Development Research Centre

Program Manager for Rapeseed and Mustard improvement programs in India and China

Past Chairman of the Oilseed Brassica Network

International Crop Science Congress - Past Director

St. Paul's United Church - Past Board Chairman and Clerk of Session

Nutana Rotary Club - Past Secretary

Government of Canada

Past Chairman - Oilseeds Committee, Canada Committee on Grain Breeding

Past Canadian Chairman - Canada-Sweden Committee for Technical and Scientific Cooperation

Past Member - Expert Committee on Plant Gene Resources

Co-organizer - National Workshop on Plant Gene Patenting

Member - Advisory Committee to the Plant Biotechnology Institute of NRC

Past Leader - Oilseeds and High Energy Grains Task Force on Agriculture Commodity System

Past Member - National Advisory Board on Science and Technology