

DEVELOPMENTS AT THE SASKATCHEWAN IRRIGATION
DEVELOPMENT CENTRE

LAURIE TOLLEFSON
CENTRE MANAGER
SASKATCHEWAN IRRIGATION DEVELOPMENT CENTRE
OUTLOOK, SASKATCHEWAN

1. INTRODUCTION:

1.1 Background:

The Saskatchewan Irrigation Development Centre had its origin as the PFRA Farm. The PFRA Predevelopment Farm was established at Outlook in 1949 prior to the development at Gardiner Dam. The farm was designed as a centre to demonstrate irrigation methodology to aid farmers in their transition to irrigated agriculture. Upon completion of Gardiner Dam the farm became known as the Demonstration Farm and served a useful role in demonstrating aspects of irrigation technology.

1.2 Saskatchewan Irrigation Development Centre:

As irrigation evolved in Saskatchewan lack of a co-ordinated irrigation research and demonstration program was realized. A joint federal-provincial agency called the Saskatchewan Irrigation Development Centre was formed in 1986 to help better address these needs. The Centre consists of the PFRA Demonstration Farm (65 hectares) plus an additional 16 hectares. Research and demonstration will be conducted both at the Centre and on selected satellite sites.

1.3 Physical Changes:

Many changes have occurred to upgrade the facility. These changes include the following: a) removal of gravity supply canals, b) 3 phase power brought to site, c) installation of 3 electrical centre pivots and a specially designed linear, d) buried pressurized mainline and control structure installation, e) incorporation of an additional 16 hectares, f) surface drainage improved and a gravity effluent collector installed, g) subsurface drainage installed, h) meteorological station moved to site, i) roads redone and gravelled, j) field shelter-belts removed and replacement species ordered, k) area fenced. These changes allow more precise irrigated research and demonstration studies to be conducted.

1.4 Responsibilities:

To operate the Centre the responsibilities are as follows:

- a) Agriculture Canada (PFRA) - agreed to provide the existing farm, equipment, land and staff, updated irrigation equipment and agreed to improve drainage.
- b) Saskatchewan Water Corporation - agreed to supply a closed pressurized water supply and distribution system.
- c) Saskatchewan Agriculture - agreed to provide support staff, research and demonstration funds via the Ag Development Fund and provide extension activity.

1.5 Committees:

Three committees govern the operation of the Centre.

a) Centre Management Committee

This committee is the main governing body of the Centre. It is made up from members of the PFRA and Saskatchewan Agriculture's Irrigation Branch. This body co-ordinates the general Centre program and budget.

b) Research Advisory Committee

This committee identifies irrigation research needs and ensures that the proposals are scientifically and technically sound. This group includes membership from the University of Saskatchewan, Agriculture Canada Research Branch, Saskatchewan Water Corporation, Farmer members and the Minister's Advisory Council. This group recommends irrigation projects to be funded by the Ag Development Fund both at Outlook and at selected sites.

c) Demonstration Advisory Committee

The demonstration advisory committee identifies and recommends a demonstration program responsive to the needs of the irrigation farmer. This group co-ordinates work at the Centre and at selected satellite sites. It includes membership from PFRA, Saskatchewan Agriculture, Saskatchewan Water Corporation, Farmer members, and the Minister's Advisory Council.

These groups initiated a Research and Demonstration program for 1986. These activities were funded by the Ag Development Fund or through local Centre budget. The following are the list of Research and Demonstration projects conducted in 1986.

1.5.1. Research:

1. Dr. Bernard P. Goplen, Management of Forage
Principal Research Scientist, Production Under
Agriculture Canada, Irrigation
Saskatoon Research Station.
2. Dr. Al E. Slinkard, The Evaluation of Field
Senior Research Scientist, Bean as an Alternative
Crop Development Centre, Grain and Seed Production
University of Saskatchewan. Crop for the Irrigation
Regions of South Central
Saskatchewan
3. Professor Don Dabbs, Optimizing Yields for
Horticulture Science, Production of Industrial
University of Saskatchewan. Starch Potatoes in
Saskatchewan
4. Dr. Brian G. Rossnagel, Maximizing Irrigation
Research Scientist, Semi-Dwarf Barley
Crop Development Centre, Production
University of Saskatchewan.

5. Dr. Lorne J. Duczek, Plant Diseases of
Research Scientist, Irrigated Cereals at
Agriculture Canada, Outlook
Saskatoon Research Station.
6. Dr. Bryan L. Harvey, Head, Screening for Pytopath
Crop Science and Plant Resistance in Cereal,
Ecology, University of Pulse and Oilseed Crops
Saskatchewan. for High Moisture
Enviorns of Saskat-
chewan, Including Irrigated
Production Systems
7. Dr. Wally Nicholaichuk, Herbicide, Nutrient and
Head, Watershed Research, Water Drainage from an
National Hydrology Research Irrigated Field
Institute.
8. Jon A. Gillies, Agronomic and Environ-
Agricultural Engineering, mental Impact of
University of Saskatchewan. Groundwater for
Irrigation
9. Dr. Suren Kulshreshtha, An Assessment of Area
Principal Researcher, Specific Economics of
Agricultural Economics, On-Farm Irrigation
University of Saskatchewan. Development in
Saskatchewan

1.5.2. Demonstrations and Tests:

1. Long-term improvements of forage production on the Maple Creek Irrigation Project - Normac A.E.S. Ltd., Dr. D. R. Cameron, Swift Current, Saskatchewan.
2. The use of infra-red photography to demonstrate the variation in crop growth related to farming practices and to outline yield improving strategies - Ponteix Water Users Association, Paul Perrault, President and John Linsley, Irrigation Branch.
3. High Yielding Wheats Irrigated Cooperative Variety Trial - Crop Development Centre, Agriculture Canada.
4. Western Soft White Spring Wheat Cooperative Variety Trial - Crop Development Centre, Agriculture Canada.
5. Intensive Cereal Management of Soft White Spring Wheat - Saskatchewan Irrigation Development Centre.
6. Intensive Cereal Management of Winter and Spring Wheats - University of Saskatchewan.
7. Seed Treatment of Irrigated Winter Wheat - University of Saskatchewan.
8. Intensive Cereal Management of Barley - Crop Development Centre.
9. Regional Irrigated Spring Grain Variety Trials - Crop Development Centre.
10. Regional Irrigated Canola and Mustard Variety Trial - Agriculture Canada.

11. Canola Fertilizer Management and Variety Trial -
Saskatchewan Canola Growers Association.
12. Rapeseed Irrigated Cooperative Variety Trial -
Agriculture Canada.
13. Mustard Irrigated Cooperative Variety Trial -
Agriculture Canada.
14. Sunflower Irrigated Cooperative Variety Trial -
Agriculture Canada.
15. Irrigated Lentil Management - Saskatchewan Irrigation
Development Centre.
16. Commercial Grain (Silage) Corn Irrigated Cooperative
Variety Trial - Saskatchewan Corn Committee.
17. Silage Corn Feed Value and Related Harvest Stage -
Saskatchewan Corn Committee.
18. Alternative Irrigated Forages From Europe - Agrar
Consulting Ltd. and KWS Seeds Ltd.
19. Irrigation Scheduling Equipment and Methodologies
Saskatchewan Irrigation Development Centre.
20. Field and Subsurface Drainage Investigation -
Saskatchewan Irrigation Development Centre.

1.6 Operations 1986:

Despite the fact that 1986 was a construction year a full complement of research and demonstration activity occurred. Due to the construction activity water was not available until July 1 which in some instances caused drought stress to occur. These instances are well documented.

Research and demonstration blocks were established, surveyed and marked. A crop rotation sequence was established to facilitate the studies yet maintain overall soil productivity. A detailed soil survey was also conducted and a Centre soil map will be produced. Surface drainage was improved and a gravity effluent collector installed. This collector drains by gravity to the river flat area. Subsurface drainage was also installed in the severely affected area.