

REPORT OF THE SASKATCHEWAN ADVISORY COUNCIL
ON SOILS AND AGRONOMY

to the

SASKATCHEWAN AGRICULTURAL SERVICES
COORDINATING COMMITTEE

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1. Structure

The Saskatchewan Advisory Council on Soils and Agronomy has operated for the past 6 years with four committees: Soil Fertility, Weeds, Tillage, and Special Soil Problems. The Council meets in April and November. Each committee meets separately once or twice annually.

2. Education and Communication Activities

2.1 Publications: The Fertility Committee oversaw the revision of various bulletins in 1984—"Saskatchewan Fertilizer Practices" and "Nutrient Requirement Guidelines for Field Crops in Saskatchewan" were published. A Potassium Bulletin has been prepared, and will be printed early in 1985, and minor changes have been made in the Nitrogen and Phosphorus Bulletins so that they can be republished in 1985. The Nitrogen, Phosphorus and Potassium bulletins will be distributed through the usual network of Ag. Rep. offices, in addition to extension services and the Saskatchewan Soil Testing Laboratory. It is also hoped that a Sulfur Bulletin will be ready for publication by the end of 1985.

The Weed Committee revised "Chemical Weed Control in Cereal, Oilseed, Pulse and Forage Crops" for 1985. Some of the major changes include: The addition of a metric addition, the addition of Bladex, Fusilade, and Lontrel, the addition of Iriazine-Tolerant Canola, the addition of a grazing and feeding restriction table, the addition of a rainfall interval table, as well as other minor changes. The publication was approved at a November meeting, and is ready to go to press, to be distributed early in 1985.

2.2 Soils and Crops Workshop: The Annual Soils and Crops Workshop is sponsored by this council, together with the University of Saskatchewan. The 1984 Workshop, chaired by Dr. R.E. Karamanos, was held on February 13 and 14. Twenty-nine papers were presented for discussion and publication in 276 page proceedings. Preparations for the February 18-19, 1985 Workshop are well in hand under the Chairmanship of Mr. M.C.J. Grevers. The theme of this workshop is "Realistic Conservation Strategies--Conservation for the Future--Farmland, Research, Agribusiness, Farmers".

2.3 Optimum Tillage Challenge Conference: The Saskatchewan Institute of Agrologists and the University of Saskatchewan sponsored a most successful conference on optimum tillage practices in November of 1984. Emphasis at this conference was centered on changing tillage and cropping systems, particularly in response to soil conservation needs.

2.4 Summer Tour: Unfortunately, the annual summer tour sponsored by the Council which was to have been held in the vicinity of Yorkton under the Chairmanship of Zane Lewchuk had to be can-

celled at the last minute, owing to a low registration. Council discussed reasons for this, and decided that they would go ahead with the 1985 tour, which will be held in the Tisdale-Melfort area, with Roy Button and Ed Tanner in charge of arrangements.

3. Resolutions

Resolution 1: WHEREAS, in light of the fact that approximately 40% of all agricultural pesticides used in Canada are used in Saskatchewan, there is a pressing need for a strong pesticide safety program in the province, and

WHEREAS, the deletion of the pesticide safety specialist position in the Plant Industry Branch is a serious backward step in the provincial effort to promote the safe use of pesticides, and

WHEREAS, there is increasing pressure from non-farm groups for further, often unwarranted, restrictions on the use of pesticides due to concerns over the safety of pesticides, and

WHEREAS, there has been a long-standing need for increased weed control extension staff in Saskatchewan, and

WHEREAS, the reassigning of some pesticide safety responsibilities to the weed control specialist further weakens the weed control extension effort, and

WHEREAS, there is a significant need for information on non-chemical weed control methods and a significant demand from farmers for information on chemical control from an independent source,

THEREFORE BE IT RESOLVED that Saskatchewan Agriculture be encouraged to fully recognize the needs listed and to take whatever steps necessary to assure, as far as possible, the safe use of pesticides and the effective control of weeds without unacceptable levels of crop damage.

Resolution 2: WHEREAS, a significant area of Saskatchewan soils is adversely affected by soil acidity or solonchic structure problems, and

WHEREAS, there is very little practical information on the practices of deep-plowing solonchic soils and liming acid soils in Saskatchewan, and

WHEREAS, the costs of these practices are very high,

THEREFORE BE IT RESOLVED that additional research be directed to the evaluation of deep plowing solonchic soils and liming acid soils in Saskatchewan, from both an agronomic and economic perspective so that recommendations can be given to farmers.

Resolution 3: WHEREAS recent research by the Saskatchewan Institute of Pedology has shown that micronutrient deficiencies restrict crop growth on some soils in northern Saskatchewan, and that certain micronutrient fertilizer treatments produce large yield increases on severely deficient soils, and

WHEREAS these studies have indicated the need for further research to improve soil and plant tissue testing techniques to more accurately determine micronutrient status of soils and micronutrient fertilizer requirements of crops, and

WHEREAS research funding for these studies will soon be exhausted,

THEREFORE BE IT RESOLVED that provincial and federal funding be made available to continue and expand research on micronutrient status and crop requirements on Saskatchewan soils by the Saskatchewan Institute of Pedology and Agriculture Canada Research Stations in Saskatchewan.

Resolution 4: WHEREAS during the past 10 to 20 years there has been considered research undertaken to develop new equipment designs and agronomic technologies that mitigate the effects of soil erosion and land degradation, and

WHEREAS field testing of the equipment has usually been conducted as part of an agronomic evaluation based solely on crop growth indicators and grain yields, and

WHEREAS a review of past work conducted at various research centers throughout the province on conventional, minimum and zero tillage systems provides few firm conclusions as to which equipment type and method of use is most desirable for seedbed preparation, planting, or fallow cultivation, and

WHEREAS the performance indices used (i.e., crop growth indicators) are influenced to a greater extent by environmental conditions than by the tillage treatments themselves, and

WHEREAS differences between tillage treatments are further diminished by averaging the test data over a number of years. And since the test periods range from 2 to 10 years, the equipment under evaluation is frequently obsolete before the study is completed, and

WHEREAS, because of changing economic conditions and the necessity of adopting soil conserving technologies, Western Canadian producers need, more than ever, firm recommendations on the types of field machinery that are best suited for improving yields and reducing soil erosion and degradation, such information should be made available in a relatively short period of time in order to meet the urgency of this need and to remove the obsolescence consideration of long-term machine testing,

BE IT RESOLVED that an interdisciplinary research team be formed and composed of crop physiologists, weed scientists, soil physicists, tillage and design engineers, to:

- (1) Characterize the optimal soil environment for soil types, moisture conditions and crops with respect to plant growth, soil conservation, and weed control, while minimizing energy requirements,
- (2) Specify optimal fertilizer placement with respect to maximizing fertilizer use efficiency and minimizing seedling damage,
- (3) In a relatively short term, form the basis for design criteria for soil tools and recommendations with respect to tillage practices in general,
- (4) To hold regular tillage workshops for exchange of scientific information, coordinate research, and invite innovative ideas and exhibits from the farm community.

Resolution 5: WHEREAS the livelihood of Saskatchewan farmers depends on their ability to compete in the international market place, and

WHEREAS it has been demonstrated that research is essential in maintaining a competitive advantage, and

WHEREAS it has been demonstrated that farmers benefit directly from the dollars spent on agriculture research, up to 35% per dollar spent,

BE IT RESOLVED that the SACSA ask the Government of Saskatchewan to enact the necessary legislation which will allow for and encourage the implementa-

tion of a research check-off on commodities grown in Saskatchewan; the funds so raised to be used for the purposes of conducting research into the production, marketing, market development, and extension of research information with respect to such crops grown.

4. General Comments

The Council was very pleased with the continued success of the Saskatchewan Soil Testing Laboratory in its new facility. Despite an early fall, samples were running ahead of the record 1983 year up to the time that it became impossible to take further samples, and the turn-around time was maintained at approximately one week.

The Council was also pleased with the activities that took place under the umbrella of the Canada/Saskatchewan ERDA agreements. The Council approved of the manner in which the key areas for further research and development and on-farm delivery had been discussed in committee before the agreement had been signed. They look forward to the early translation of this agreement into a practical ongoing program, and would urge that all sections of the ERDA agreement be implemented as soon as it is possible.

It was also encouraging to see the initiative taken by PFRA in fulfilling their long-held mandate in soil conservation. The appointment of extra soils and crops specialists by PFRA in soil conservation areas was applauded. It was hoped that these new services will be closely integrated with the existing extension service provided by the Province of Saskatchewan, and with ongoing programs in the Agriculture Canada Research Stations, and at the Institute of Pedology and Crop Development Centre.

The Council were of the opinion that the "Guide to Farm Practice" (1984 Edition) had been well received by the farming community, and that its publication should be continued with an update in 1987. Council are already taking steps to make sure that all necessary revisions will be made by that time, and discussions are under way with regard to the most efficient distribution system within the province.

It was also encouraging to see soil conservation addressed by a major Senate Report entitled "Soil at Risk". While Council did not agree with all details and recommendations made in this publication, they were in general agreement with the focus and intent of the publication. They welcomed this interest by federal politicians in a vitally important ongoing problem, and trust that the publication of "Soil at Risk" plus the AIC/CSSS publication entitled "Will the Bounty End?" will keep the problem of land degradation in front of the public. Every effort should be made to continue this discussion, and maintain this dialogue.

Finally, with regard to the proposed Soil and Water Research Centre, both the previous and present Ministers of Agriculture have

indicated that this center is still a high priority within the government policy. It is urged that continual pressure be kept up to ensure the delivery of this center to Western Canada.

5. Membership Lists

The membership lists of the Advisory Council on Soils and Agronomy, and the four committees that report to it are attached. We would like to acknowledge the service given to the Saskatchewan Advisory Council on Soils and Agronomy by Professor J.R. Peters of the School of Agriculture in his capacity as secretary, and as a member of the board over the past four years. His successor as secretary will be Professor Ross Ashford of the Department of Crop Science and Plant Ecology at the University of Saskatchewan, starting in January of 1985.