SASKATCHEWAN SOIL TESTING LABORATORY
1987-1988 Report

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Use of the Saskatchewan Soil Testing Laboratory by producers in the spring of 1987 (3100 fields submitted), and by non-farm users overall since 01 July 1987, were both down only slightly from the record levels for these volumes set in 1986. However, Fall 1987 farm test volume was again up from the previous fall, and exceeded only by the corresponding volumes in 1981 and 1983. The negative effect of continuing poor grain prices tends to lead to cutbacks in use of all inputs, including soil testing services. However, the early harvest, ideal weather in October-November for sampling, and probably some increase in the adoption of soil testing as a routine part of farm management, all contributed to an increase of almost 20% in Fall farm sample analysis despite poor grain prices (Table 1).

Table 1: Numbers of Samples Received by the Saskatchewan Soil Testing Laboratory, by years; 01 July 1984 to 31 January 1988.

	1984-1985		1985-1986		1986-1987		1987-1988	
	July 1 to June 30						(July 1 to Jan 31)	
Source of Samples	No. of Samples (No. of fields in brackets)							
Soil Samples								
Farm								
Complete (0-24")	40,923	(13641)	39,360	(13,210)	44,175	(14,725)	43,365	(14455)
N-Only (to 24")	2,667	(889)	1,809	(603)	1,476	(492)	1,155	(385)
0-6" Complete	1,501	(1,501)	1,363	(1,363)	799	(799)	443	(443)
Industry, Gov't	7,081		9,149		9,812		8,288	
Dept. of Soil Science	5,531		8,427		7,395		4,012	
University	1,726		3,662		3,003		1,673	
Gardens	301		280		314		152	
Plant Samples	1,600		2,426		6,811		3,748	
Water Samples	438		747		648		542	
Total Samples	61,302	(16,031)	67,493	(15,176)	74,433	(16,016)		
Total-Fall Only	46,807	(12,783)	49,601	(11,509)	57,825	(12,878)	63,378	(15,283)

The routine Farm Soil Fertility Test Packages offered, and charges for them, were again unchanged for 1987-1988. The Complete Test (NO_3-N, P, K, SO_4-S, pH, and salinity with interpretation) is priced at $24.00, while the charge for the Nitrogen Only Test is $15.00. Due to increasing costs and the termination of Provincial government salary support to the Laboratory, these rates which were in effect since July 1982 will very likely have to be increased in July 1988.

Two additions were made in 1987 to the list of tests being offered. The first is a soil chloride test, which can be carried out on samples taken to the 24" depth. It should be useful for screening fields for trial applications fo chloride-containing fertilizer applied for the chloride effect which occasionally improves yield.

A Greenhouse Media Test package was also introduced. It consists of a determination of pH, and of conductivity (salts) and major nutrient levels in a saturation extract of the media. In cooperation with the Department of Horticulture Science, an extension publication on media analysis has been produced, and a tentative report format and set of general interpretive guidelines have been arrived at.

A new leaflet entitled "Fertilizing Gardens and Lawns in Saskatchewan" was produced in the spring of 1987 by the Laboratory, and is available for distribution on request. The Laboratory's Leaflet #1, "Fertilizer Practices for Saskatchewan" was revised and reprinted in April. A new one-page extension document entitled "Soil Testing Legume Stubble" (Leaflet #3) was printed in September, in response to the increasing interest in the effect of pulse crops on the fertilizer N requirements of following crops in the rotation.

Nitrate levels in farm samples submitted in the fall of 1987 were generally normal and similar to those of the previous year, when summarized on a soil zonal basis (Table 2).

Table 2: Percentage of fields submitted in two selected nitrate-N test ranges; Fall 1984, 1985, 1986 and 1987.

	More than 45 lb/Ac (0-24")				More than 60 lb/Ac (0-24")			
	1984	1985	1986	1987	1984	1985	1986	1987
	----------% of fields----------							
SUMMMERFALLOW								
Brown	55	68	69	67	28	44	41	39
Dark Brown	72	79	78	69	45	53	51	45
Thin Black	85	78	70	71	63	60	53	52
Thick Black	90*	84*	71*	66*	74*	71*	61*	59*
Gray Black	79*	78*	70*	68	58*	64*	51*	55
Gray	65*	64*	56*	64*	39*	51*	39*	51*
STUBBLE								
Brown	32	44	18	22	18	27	11	12
Dark Brown	37	27	17	17	23	16	10	10
Thin Black	32	22	12	13	21	13	6	7
Thick Black	26	16	18	17	14	9	9	8
Gray Black	8	6	9	11	3	3	5	6
Gray	9	4	9	8	4	2	4	4

*based on fewer than 300 fields; other data based on 300 to 3000 fields

NOTE: All data is from samples taken in the Fall of the indicated year only.

As always, wide variations in soil test N levels on a more local basis exist due to localized weather patterns and cropping practices. The frequency of relatively low nitrate levels among fallowed soils was somewhat higher than average for most zones, possibly in part due to fallow weed control problems in areas receiving frequent summer rainfall.

The frequency of low soil test S (SO_4-S) levels in soils submitted from the Brown and Dark Brown soil zones is still of concern, as field experimentation in 1987 again showed little evidence of economic response to S fertilization on any soils of those Zones. Soils submitted from the Brown Zone in particular tested even lower in S than in 1986; S test levels in almost one of every six fields from that Zone were low enough for S fertilization to be suggested for cereal crop production.