

SASKATCHEWAN SOIL TESTING LABORATORY
1983-84 REPORT

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The New Laboratory

The Saskatchewan Soil Testing Laboratory began operation out of its new quarters in the General Purpose Building, adjacent to the Feed Testing Laboratory, on September 1, 1983. The new facility provides some 570 square meters of space, almost double that of the previous location in Kirk Hall. The General Purpose Building is located northeast of the Western College of Veterinary Medicine on the Saskatoon Campus of the University of Saskatchewan. It is anticipated that increases in volume of analysis (and therefore revenue) resulting from improved customer service will be sufficient to offset the large financial commitment which the new facility represents.

Sample Volume

The farm sample volume for Fall 1983 was second only to that of Fall 1981 (when ten percent more samples were received), and was considerably greater than the Fall 1982 volume (Table 1).

Table 1: Numbers of Samples Received by the Saskatchewan Soil Testing Laboratory

Source of Samples	Number of Samples Received	
	July 1/82 to June 30/83	July 1/83 to Jan. 31/84
Soil Samples		
Farm		
Complete test (0-6, 6-12, 12-24")	43,080	50,265
Nitrate-Only (N + S in 83/84)	3,228	918
0-6" Complete	—	1,100
Industry	7,002	7,018
University	2,866	2,126
Dept of Soil Science	4,852	3,749
Gardens	188	143
Plant Samples	2,133	3,803
Water Samples	278	124
Total Samples	69,246	63,627
(Total Number of Farm Fields)	(15,436)	(18,161)

NOTE: - 1982-83 data include spring receipts; 1983-84 figures do not.
- "Farm" samples include all those received for the routine fertility test packages with fertilizer recommendations.

Farm Soil Tests and Prices

The price of the Complete farm soil fertility test package (N, P, K, S, pH, Salinity; 0-6, 6-12, 12-24" samples) was held at \$24 per field for 1983/84, and this price will be maintained for 1984/85. The Nitrogen and Sulphur Only test offered in 1983/84 (with a guaranteed one-week or less turnaround time at \$24/field) will be continued for 1984/85.

In response to the large volume of surface-only soil samples being taken and sent out of the province for analysis and fertilizer recommendations, a 0-6" Complete Test is being offered at \$24. It includes N, P, K, S, pH, and Salinity

tests and recommendations. The value of the determination of residual NO_3^- and SO_4^{2-} in the root zone (as opposed to the surface soil only) in estimation of fertilizer N and S requirements for Saskatchewan conditions is recognized, as is the significance of salinity which may be present below the surface soil. Therefore, proper sampling to 24" should be encouraged.

Turnaround Time

A major improvement in turnaround time was achieved. For all routine farm fertility tests, reports with recommendations were in the mail within one week of sample receipt throughout the Fall 1983 period. Long turnaround time of up to several weeks for samples received in the fall had been a major problem in previous years; the increasing popularity of fall fertilizer application made rapid return of soil test results particularly important. It is anticipated that the improvement should result in a relative increase in use of the Laboratory by farmers and fertilizer dealers in the future.

Other Operational Changes in Progress

The development of the in-house computer system is nearing completion. Improved data handling efficiency should result, as well as the elimination of expenses currently being paid for off-site computing services.

A simplified information sheet to be used in association with farm fertility tests is being developed.

A logo has been adopted to identify the Laboratory. It currently is being used on the Laboratory letterheads and envelopes, and will appear on laboratory bulletins, reports, boxes, etc. as new stocks of these are brought in.



Nitrate-N Levels -- Fall 1983

Average $\text{NO}_3\text{-N}$ levels in samples submitted for the Complete Test (0-24") in the Fall of 1983 were similar to those in samples from the Fall of 1982, and somewhat below the long-term average levels. As the detection of fallow fields with lower than "normal" $\text{NO}_3\text{-N}$ levels, as well as stubble fields with higher than "normal" $\text{NO}_3\text{-N}$ levels, is of most significance relative to fertilizer use decisions, an indication is made below of the percentages of fields which might fall into these classifications (Table 2).

Table 2: Proportions of relatively "low" N-testing fallow fields and "high" testing stubble fields for 1982 and 1983 (Fall).

Soil Zone	Percentage of summerfallow fields submitted with less than 60 lb/Ac $\text{NO}_3\text{-N}$ (0-24")		Percentage of stubble fields submitted with more than 45 lb/Ac $\text{NO}_3\text{-N}$ (0-24")	
	Fall 1982	Fall 1983	Fall 1982	Fall 1983
Brown	60	67	17	15
Dark Brown	48	49	25	24
Thin Black	34	33	26	30
Thick Black	39 (149)*	22 (150)	30	32
Gray-Black	54 (293)	57	15	14
Gray	69 (145)	55 (215)	12	14
All	49	53	23	22

* for each value based on fewer than 450 fields, the no. of fields is indicated.