

NOVA Chemicals Joffre Site Soil Enhancement Program

As an agricultural producer, you strive to ensure that soil nutrient levels are adequate to provide your crops the benefit of as much nutrition as they require to achieve maximum yields. One of the most overlooked soil characteristics that causes nutrient availability issues in Central Alberta is soil pH.

In acid soils, low levels of calcium can impede root development, thereby reducing the plant's ability to access water and nutrients. Research shows that when soil pH is increased from slightly acidic (5.5-5.9) to nearly neutral (7.0) nutrient availability and uptake is greatly increased.

Sample Soil Test Report Prior to Soil Enhancement

Soil Test Report															
Depth	OM	P	P1	P2	K	Mg	Ca	pH	pH B	CEC	% K	% Mg	% Ca	% H	% Na
0-6"	4.6	22	45	0	200	220	2120	5.9	6.4	20.2	2.5	9.1	52.5	35.7	0.2
6-12"	3.1	0	0	0	93	265	2730	6.9	6.9	17.3	1.4	12.7	78.8	6.9	0.2
Depth	S	N	Cl	Zn	Mn	Fe	Cu	B	SS	Sat P%		Al	K/Mg	Na	
0-6"	11	5	3	2.9	42	84	0.7	0.5	0.1			7	604	0.27	11
6-12"	8	2	0	0	0	0	0	0	0			0	0.11	8	

NOVA Chemicals Joffre Site uses lime in its process for the purpose of removing hardness from water extracted from the Red Deer River. This process forms a spent lime – calcium carbonate slurry that is stored on site in settling ponds. NOVA Chemicals, together with Agri-Trend Agrology Ltd., has identified that this slurry has agricultural benefits for landowners adjacent to the Joffre site. NOVA Chemicals is using this beneficial by-

product to treat area lands in order to enhance soil properties of locally acidic soils, as well as keep the slurry product out of area landfills. The application of lime sludge to agricultural lands is regulated and approved by Alberta Environment. Area landowners who have received this beneficial soil amendment have seen improvements in the pH of their soil, as well as an improved balance of cations in the base saturation of their soil, as shown below.

Sample Soil Test Report After Receiving Soil Enhancement

Soil Test Report															
Depth	OM	P	P1	P2	K	Mg	Ca	pH	pH B	CEC	% K	% Mg	% Ca	% H	% Na
0-6"	5.7	0	0	0	197	330	2700	6.8	6.9	18	2.8	15.3	75	6.7	0.2
Depth	S	N	Cl	Zn	Mn	Fe	Cu	B	SS	Sat P%		Al	K/Mg	Na	
0-6"	24	19	0	0	0	0	0	0	0			0	0.18	10	



NOVA Chemicals
Joffre Site

Method of application of lime slurry. Irrigation technology is utilized to minimize compaction or other disruptions to the receiving fields.

Typical Lime Slurry Analysis	
Total Nitrogen	0.13%
Total Phosphorus	0.37%
Total Calcium	30.80%
Total Magnesium	4.90%
Total Neutralizing Value(CCE)	91.96

NOVA Chemicals, along with partners Agri-Trend Agrology Ltd. and Lambourne Environmental are currently spearheading a project to identify and qualify acidic land in the area. Landowners within an approximate 15 km radius of the Joffre site are encouraged to contact NOVA Chemicals if you are interested in becoming a participant in the program. Such a request will result in the lands being sampled by Agri-Trend Agrology Ltd. and it's professional Agrologists to assess the land's requirement for the beneficial application of lime slurry. Currently, all costs associated with sampling, handling and application of the lime are covered by NOVA Chemicals.

For more information on the Soil Enhancement Program, or to request an assessment of your lands for inclusion in the program, please contact Al Kennedy at:

NOVA Chemicals
Al Kennedy, P. Eng.
Senior Environmental Engineer, Joffre Site
Phone: 314-8639
kenneda@novachem.com