FACT SHEET
Pasture & Forage
饲料与草场

SPANISH RIVER CARBONATITE
"Remineralizing Your Soil"

Spanish River Carbonatite (SRC) has been used extensively on pasture and forage lands in Ontario, Quebec and Michigan and remains the largest acreage of application. Over the last 12 years several comparative trials have been run to evaluate hay quality treated with SRC. These case histories are ongoing to evaluate effectiveness on a wide variety of soil types and conditions. It was the Company's objective to improve pasture and forage quality thus improving animal health and productivity.

西班牙河岩（SRC）已被广泛应用在安大略、魁北克和密歇根以及其余的大片牧场和饲料地。在过去的12年里，已进行了多项对比试验来评估SRC对于干草质量的应用。这些历史中的案例仍在进行，以评估多种土壤类型和条件的有效性。博莱公司的目标是改善牧草和饲料质量，从而提高动物的健康和生产力。

The first test areas were soil types that had been identified as naturally acidic. These soil types are prone to aluminum, iron and manganese toxicities. Aluminum ("AL") toxicity is a widespread problem and is one of the major limitations to world food production. Al toxicity is progressive, it will not go away.

第一个试验区的土壤是被鉴定为天然酸性土壤。这种土壤类型容易发生铝、铁和锰中毒。铝（Al）中毒是一个普遍存在的问题，也是世界粮食生产的主要限制之一。铝毒是逐步加深的，它不会消失。

Concurrent with this research SRC was applied on soils recognized as base saturated. The application of calcium on such soils is never recommended yet forage analysis from these plots documented changes in protein and mineral levels.

结合这项研究，SRC被应用在饱和基的土壤上。这片土壤从未被施用过钙，且饲料分析表明了蛋白质和矿物含量的变化。

One field test included that of Zubler Dairy Farms which is comprised of 800 acres & 85 dairy cows. The farm purchased 40 metric tonnes of SRC in the spring of 2001 and commenced trails on forage crops.

其中一项测试如下："Zubler"奶牛场有800亩地和85头奶牛。该农场在2001春季购买了40公吨的SRC，并开始种植饲料作物。

Crop	Application Rate	Dry Basis Protein				%			ppm	%	
作物	SRC应用率	干基蛋白	Ca 钙	P 磷	K 钾	Mg 镁	Na 钠	Zn 锌	Mn 锰	Cu 铜	Fe 铁
Haylage 青贮饲料	1000lbs/acre	22.85	2.05	0.25	2.62	0.26	0.05	23.3	19.93	8.36	107.53
Haylage 青贮饲料	0lbs/acre	16.04	1.05	0.24	3.18	0.22	0.02	30.0	15.67	5.06	103.52

Based on these results Zubler Dairy Farms has incorporated SRC into their fertilizer program since that time and continues to achieve the same results.

基于这些结果“Zubler”奶牛场从此将SRC纳入他们的施肥方案，且持续得到同样的效果。

The latest research plot was conducted at D-Line Farms in Watford. The farm is located on the Lampton clay plain that is comprised of calcareous fine silt to clay. The preliminary soil analytical work showed well mineralized profiles with natural low levels of magnesium. Initial tissue samples were taken seven weeks after application. The representative samples were sent to AGAT Laboratories for a 35 element ICP scan.

沃特福德的“D-Line”农场进行了一项最新的研究。农场位于兰普顿粘土平原，土壤为钙质粉砂粘土。初步的土壤分析结果表明，其中镁的天然含量很低。应用SRC七周后取组织标本，样品被送到AGAT实验室进行35元素ICP扫描。

Sample Description	Al %	Ca %	Co ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Sulfur %	Zn ppm 0.5
Alfalfa B - Control	0.22	12.18	1.00	100.00	0.18	27.60	2.20	300.00	32.50	0.50	10.00	>10000	1.40	150.00
Alfalfa A - SRC	0.15	12.90	1.50	106.00	0.12	26.70	3.45	200.00	29.00	1.65	10.00	>10000	1.10	180.00

Like all other test plots forage analysis showed a reduction in potential plant toxicities (Al, Fe, Mn, K) and an increase in essential macro and micronutrients. Of particular interest was the increase in magnesium content on a naturally Mg deficient soil.

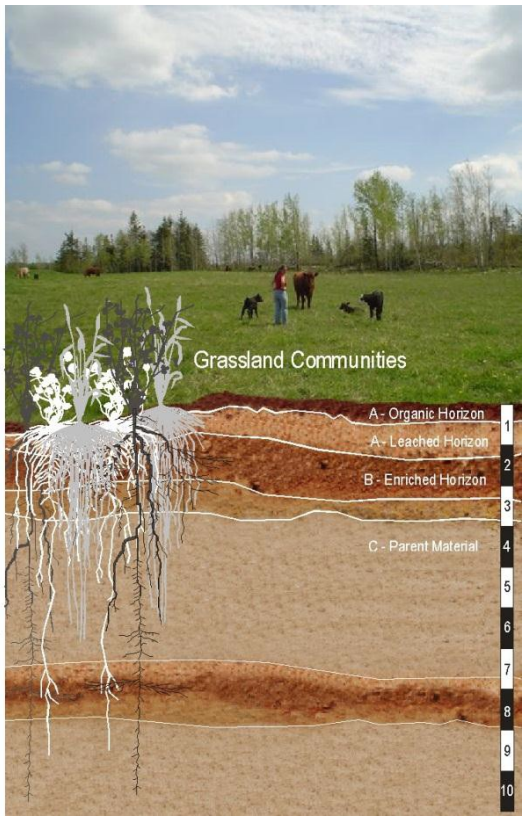
与其它试验区一样，牧草分析显示潜在的植物毒性（铝、铁、锰、钾）减少，必需的宏量和微量元素增加。特别令人感兴趣的是天然镁缺乏的土壤中镁含量的增加。

There is a strong trend to having an increased mineral content on dairy operations with the exception of potassium. With the long term use of dairy manures potassium levels are usually too high and often results in heart health problems. In situations of excess potassium SRC reduced plant uptake, conversely in other agricultural applications where potassium deficiencies were documented SRC increased potash uptake.

除了钾以外，乳品业的矿物质含量有一个很强的增加趋势。奶制品长期使用肥料通常会导致钾含量过高，结果往往会造成心脏健康问题。在钾过量的情况下，SRC可以减少植物吸收；相反，在其它钾缺乏的农业应用中，SRC能增加钾肥的吸收。

SRC is a vital ingredient in the restoration and improved vitality of soils. This calcium based mineralogical complex agromineral stimulates soil biota resulting in the increased mineral uptake through improved soil aggregation, elimination of potential toxicities and lastly increased sequestration of nitrogen and carbon.

SRC是恢复和改善土壤活力的重要成分。这种钙基矿物复合农用矿物刺激土壤生物群，通过增加土壤聚集，消除潜在的毒性，最后增加氮和碳的吸收，从而增加矿物的吸收。



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