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Boreal Agrominerals Inc. (hereafter "**Boreal**")

Technical Report

The Spanish River Carbonatite Complex: Sampling for purposes of geoscience work & related industrial mineral marketing initiatives in Peru (2017)

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Executive Summary

This technical report relates to Boreal's development of the Spanish River Carbonatite Complex ("**SRCC**"). Specifically, it outlines Boreal's work in developing Spanish River Carbonatite ("**SRC**") as an agromineral fertilizer (the "**Project**"). This report also describes Boreal's sampling for the purposes of geoscience work and the academic paper that resulted from analyzing the sampled material and SRC's effectiveness in increasing yields of the Sacha Inchi plant in Peru. The academic report was published in the field of *edaphology*, also known as agricultural soil science, focusing on the impact of SRC to plant growth. The report demonstrates how the addition of SRC works to remediate, preserve soils, and aids in increasing plant yield for food consumption. The report focused on the application of SRC to the Sacha Inchi plant and demonstrated the application of SRC when combined with floral induction lead to increased yields for the plant. In addition to the sampling activities and academic paper, this report outlines related industrial mineral marketing efforts showcasing the sampling and testing results and a summary of the expenses and invoices related to this report. The SRC sampling, SRC testing, published report, and related marketing efforts are part of the overall effort to determine the economic viability of SRC as an alternative to conventional fertilizers.

This report is structured into several identified sections that are designed to capture, in an organized fashion, information necessary for the Ministry of Northern Development and Mines to evaluate the work and effort conducted by Boreal and expenditures associated therewith to further the Project. A short summary of each of the sections found in this report will be found below.

Section A. The Property

This section will summarize Boreal's property and the SRCC from which samples were taken, including the property's characteristics, location, proximity to nearby populations, and access.

Section B. Sampling

The section will outline the area from which Boreal's samples were taken, the characteristics of the samples, and their use in the Peru field study analysis. A primer on Boreal's work investigating SRC to enhance floral induction for the Sacha Inchi plant in order to improve quality and yield is included for reference. The culmination of the sampling work is the research paper titled, *Effect of Application of Carbonatite in the Pistilated Floral Induction by Danter Cachique, Marisol Gonzales, And José Anaya (the "**Peru Report**").*

Section C. Industrial Mineral Marketing

This section will outline Boreal's industrial mineral marketing activities related to the geoscience work and the Peru Report. For example: (a) marketing and presentation materials have been developed to showcase the Peru Report and the effect of SRC as a fertilizer to increase plant yields and quality; (b) Boreal's representatives have attended conferences to promote the Peru Report and related research findings; and (c) arrangements for further testing of SRC with the Peruvian government have been created.

Section D. Appendix

This section will include an Appendix of the invoices and expenses to be considered with the report.

Section A. The Property

1. Property Description and History

The Spanish River Carbonatite Complex is enveloped in a halo of fenitized granitic rocks. Carbonatite rocks with a high silicate mineral content occur along the periphery of the body. Lower silicate carbonatite occurs toward the core. The contact between fenitized wall rock and carbonatite appears to be over a maximum thickness of 300 metres. This observation is based on the trenching program and the Union Carbide drill hole. This area is referred to as the "Transition Zone" and is a complex, erratic assemblage of layered biotite sovite, fenite and mafic rocks. The transition zone appears to be a result of contact metamorphism and metasomatism. Discreet lenses bands and veins of high purity sovite have been located in this zone. The sovites in this area appear to have higher quantities of magnetite, vermiculite and apatite.

The second classification of the complex is referred to as the "**Outer Core**". This classification is used for the purpose of describing the trenching program and is adopted from a drill hole completed in 1968, by Union Carbide. The Outer Core is very similar to the transition zone with exception of a marked increase in sovite (calcite).

The third and last classification of the complex is the "**Inner Core**", comprised almost entirely of sovite.

2. General Geology of the Spanish River Carbonatite Complex ("SRCC")

Regional Structural Geology

The SRCC lies within the Abitibi Subprovince of the Superior Province of the Canadian Shield. The complex occurs along a north-south striking fault zone along the west side of the Sudbury Basin. According to the 1987 O.G.S. Study 30 this fault system maybe a graben structure branching off the Ottawa-Bonnechere graben, a system hosting carbonatite-alkalic rock complexes in the Nipissing area. Air photos of the region also suggest the complex occurs at the point of intersection of a number of regional lineaments.

Carbonatite Complex Structure

Shearing and brecciation of the enveloping quartz monzonite is common. Fractures are commonly filled with mafic pyroxenes, amphiboles and calcite. There is evidence in the trenching and the Union Carbide drill hole that blocks of fenite have peeled off the walls and are incorporated into the complex. Banding of fenites and sovite is common.

Post faulting has not been encountered at this time. The heterogeneous mixture and lack of outcrop makes it very difficult at this time to suggest that post faulting has occurred.

Fenitized Quartz Monzonite

The host rock enclosing the Spanish River Complex is massive, medium grained pink quartz monzonite. In contact with the complex the quartz monzonite has been fenitized. The granitic rock becomes mottled pink and green-blue in colour. Sodic amphibole and pyroxene have replaced the quartz in the quartz monzonite.

The fenitized quartz monzonite is brecciated and intruded by dark green mafic veins. Carbonate is commonly associated with the veins and fracture fills. The closer to the intrusive the greater the number of mafic and calcite filled fractures and veins.

Spanish River Carbonatite Complex – Transition Zone

The transition zone is predominantly fenite but exhibits less brecciation and more banding. There is a marked increase of sovite veins, lenses and bands. The purity of the sovite in this zone varies from 45% CaCO3 to nearly pure. The variations and types of accessory mineral found in the sovite is as follows:

- Vermiculite – 0 to 15%
- Biotite – 0 to 15%
- Magnetite – 0 to 5%
- Pyrrhotite – 0 to 5%
- Apatite – 0 to 5%

Overburden thickness overlying the transition zone varies from 0 to 15 metres. Bedrock exposed is highly oxidized and weathered. Aseismic survey conducted in

1975 over this area suggested depths of overburden were 50 to 90 feet and that bedrock was covered by a dense layer that came to surface.

Spanish River Carbonatite Complex - Outer Core

The actual contact between the transition zone and Outer Core is not well defined and is based on the degree of sovite verses fenite present and overburden thickness. Where there is a sharp increase in overburden would be the logical location for the contact between the complex and altered host rock. The approximate thickness of the Outer Core based on the above observations would be 200 metres. The Outer Core appears only to outcrop along the road where Vein No.3 is located. A vertical rotary percussion hole (TP-2) drilled, in 1975, in this vicinity encountered 15 feet of overburden. This is also in the vicinity of test pits, which exposed decomposed sovite very similar to TP-2.

In the O.G.S. Study, *"**Spanish River Carbonatite Complex**"* the Outer Core is described as the *Outer Phase*. The outer phase based on this report is comprised of syenite, pyroxenite, ijolite and biotite sovite. For the purpose of this report the description of the composition for the outer core is from the Union Carbide drill hole.

The Outer Core of the carbonatite-filled diatreme, is composed of biotite amphibole sovite with some phyrrhotite and minor chalcopyrite and gramphite. There is no appreciable magnetite between 1066'4" and 1339'. Between 1339'and 1495'coarse magnetite is present in both sovite and the gramphite. For the purpose of logging this core, 3 rock types are recognized, gramphite, sovite inclusions, which may be either sovite with a high proportion of inclusions, or gramphite, which has been carbonated. In either case, the dark minerals constitute up to 50% of the rock. The proportions of sovite, inclusions and gramphite in this section are: 22%, 32% and 46% respectively."

3. **Property Location and Access**

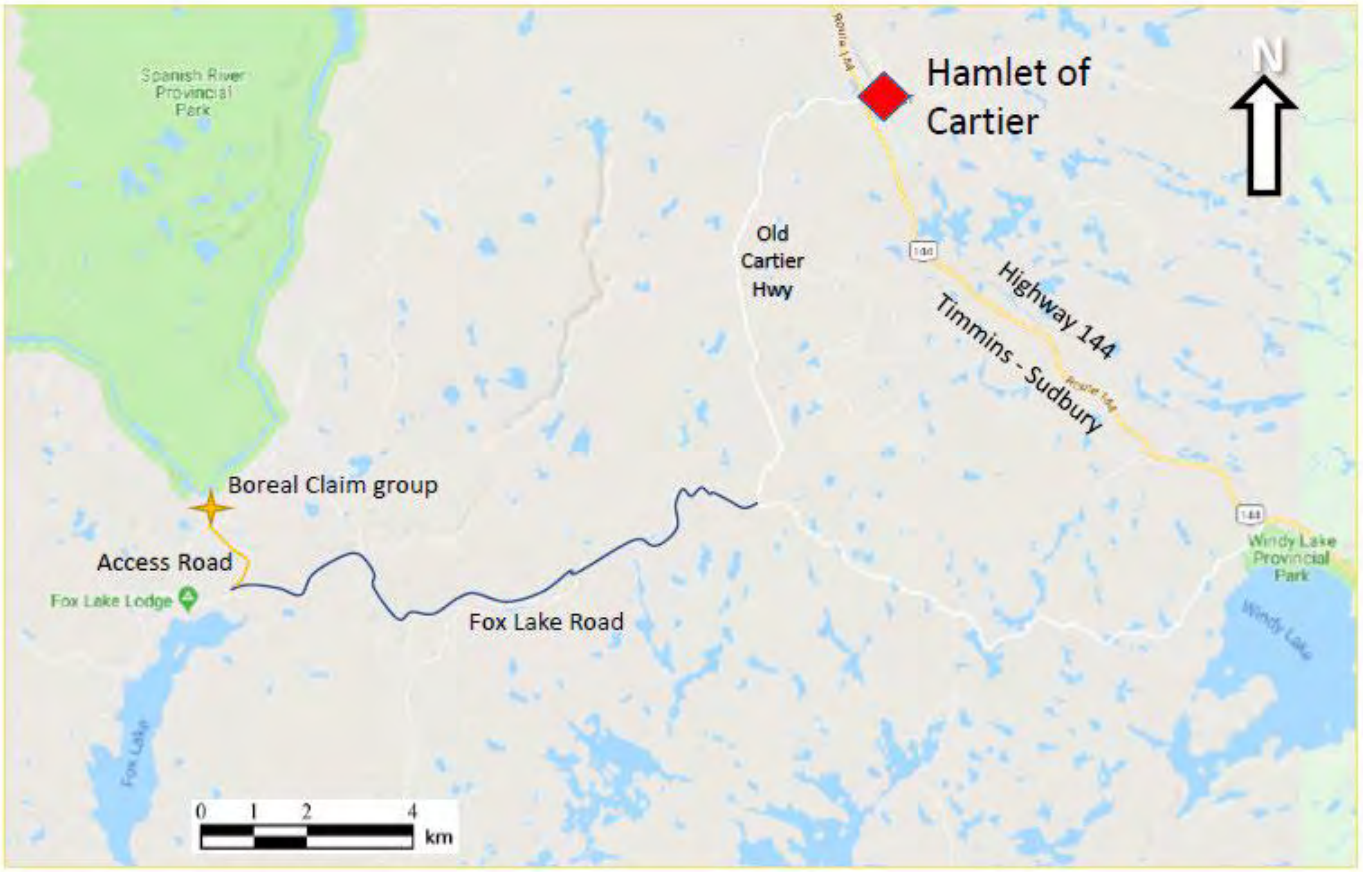
The SRCC straddles the common boundary of Venturi and Tofflemire townships just south of a sharp bend in the Spanish River known as the "*Elbow*". The property is cut by numerous, very well maintained, logging roads.

Access to the property is via the Fox Lake Lodge road, which turns southerly from highway 144 at Cartier. From Cartier it is 25 km to the property. All river and creek crossings have had culverts and bridges put in place to handle heavy logging trucks.

Cartier is the closest community with approximately 250 inhabitants. Within the community limits is a rail spur owned by C.P.R. and Sudbury is approximately 60 km south of Cartier on highway 144. Total driving time from Sudbury to the Project is approximately 1½ hours.

Figure 1 - Property Location Map

Figure 2 - Property Access Map



Section B. Sampling for Purposes of Geoscience Work

1. **Sample Location, Description, Analysis and Map**

   The material used for the field trials in Peru was obtained from Boreal's leased mining Claim # LE107372 in Venturi and Tofflemire townships. This lease is contiguous with all Boreal's mining claims in the area and is the location of Boreal's current mineral extraction activities. This lease is also within the area for which Boreal's holds an MNRF Aggregate Permit (#55336). The location of the sample that was used for the field trial is a 50m radius around 444546mE, 5163920mN (NAD 83, UTM Zone 17).

2. **Nature and Description of Sample**

   The sample used for the field trials was taken for purposes of testing the material's suitability as an agromineral fertilizer. The material is nominally 50% Calcite, 10% Apatite, 10% Biotite/Vermiculite and 5% accessory minerals. This feedstock material was mechanically sized by screening to 100% passing 0.45mm, with greater than 90% of the material being between 60 and 100 mesh. The material resembles common beach sand in texture, colour and size. The material contains nominally roughly 2% moisture.

   In January 2017, Fisher Wavy Inc. cleared an area to further expose the material to be collected, processed, dry screened and piled. The location of the material sample was chosen in part because previous exploration work, including mechanical stripping and trenching, had been completed at this location. Boreal engaged a supervisor, Chris Caron, to oversee the excavation, processing, stockpiling, and chain of custody of the sample to ensure sample integrity. A hydraulic excavator and double-deck vibratory screening plant were used on site to extract the sample and mechanically size the material. The material was loaded into tri-axle trucks with a front end loader and shipped in bulk from the deposit to a secure stockpile location in Dowling, Ontario operated by Fisher Wavy for trans-shipment. Under Boreal's supervision, a representative sample of 40 tonnes of this material was produced from the stockpiled material in Dowling and forwarded to a facility owned by Pioneer Construction in Sudbury. The sampled material was transferred into one tonne fabric totes and loaded into two sea containers for shipment to Peru. The sample was tested as outlined in the Peru Report.

Figure 3 - Boreal Claim Map

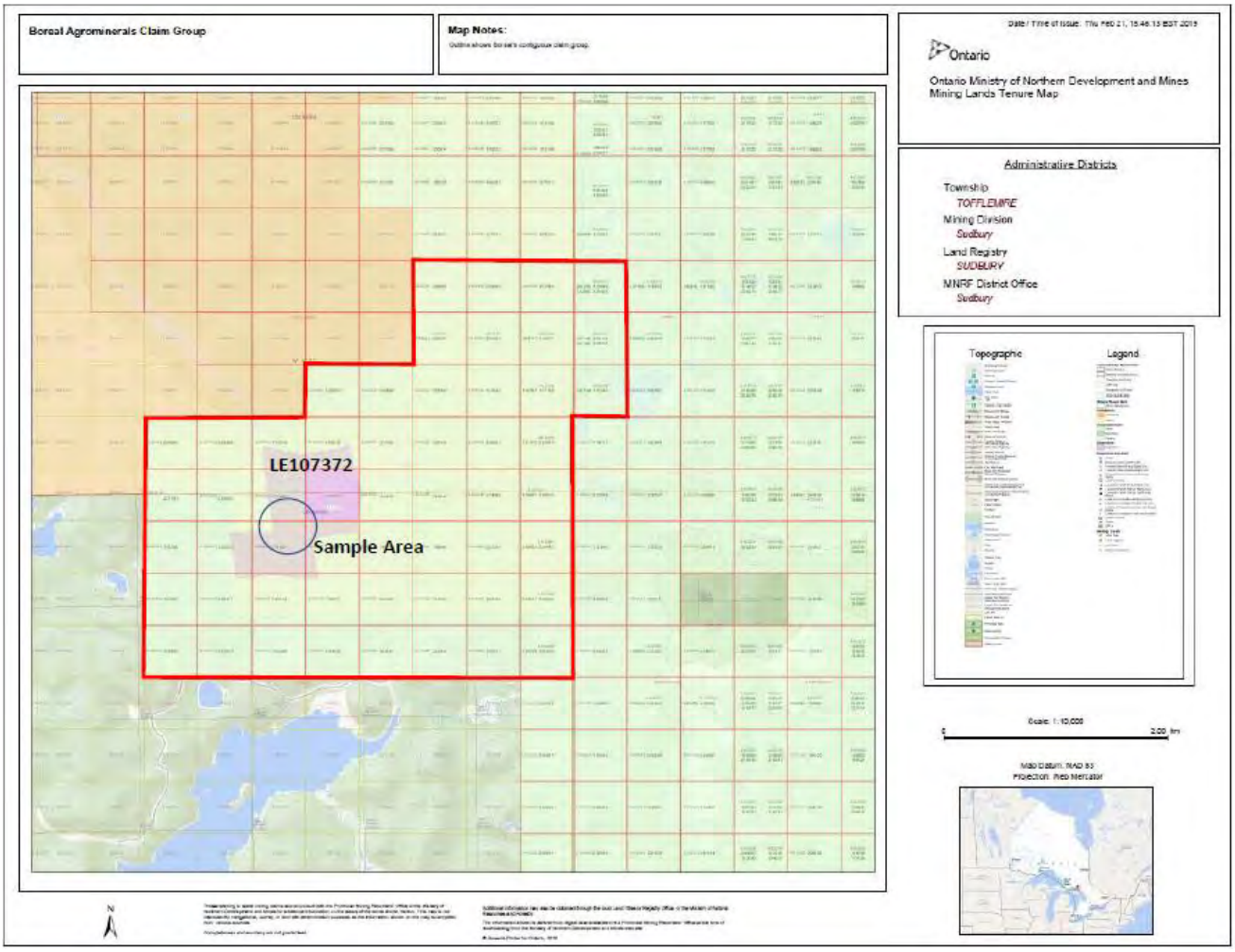


Figure 4 - Aerial Photo of Deposit Showing Sample Location

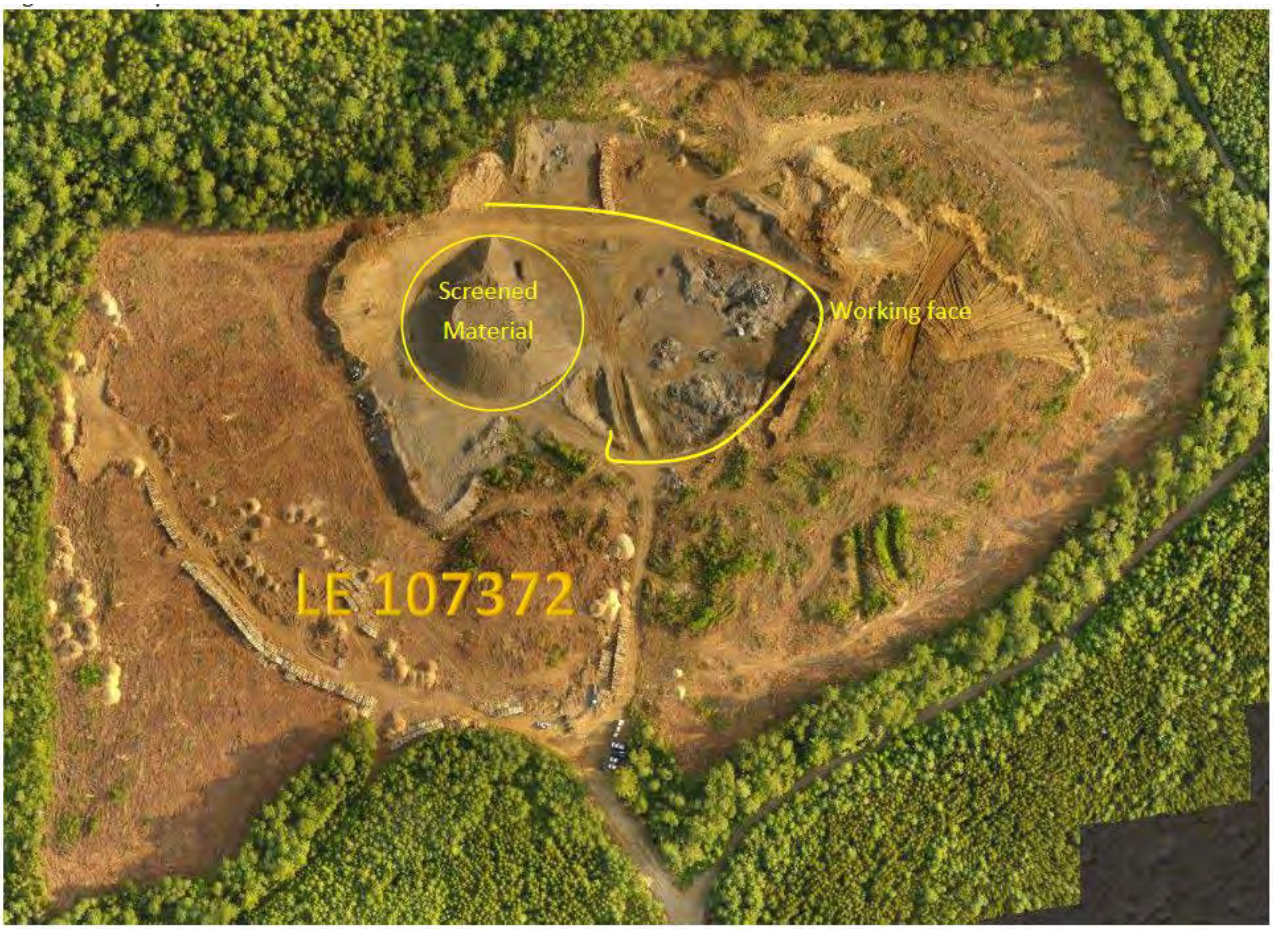
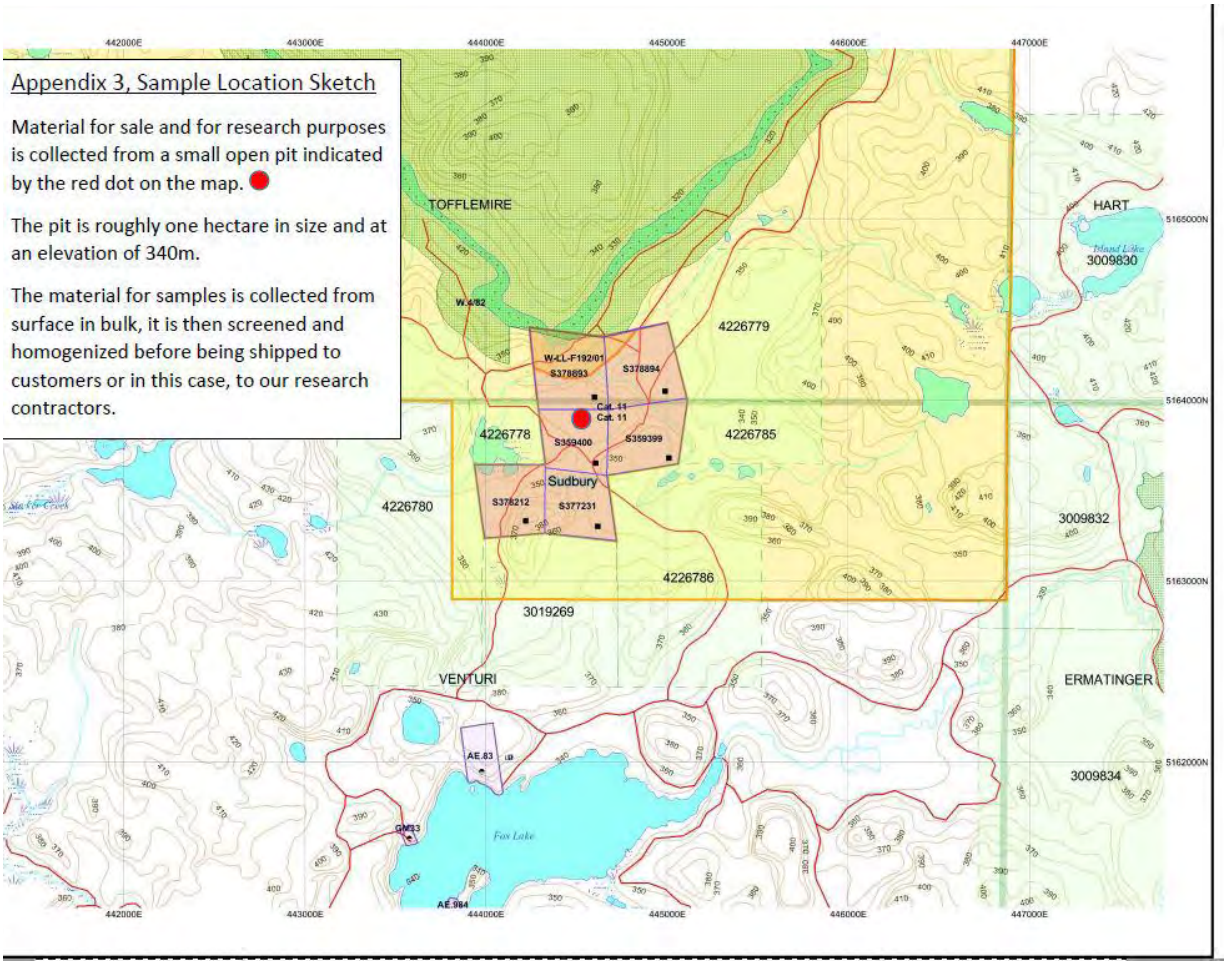


Figure 5 - Sketch Showing Sample Location



3. Geochemical Analysis of the Samples

Four cuts from the screened material were submitted for geochemical analysis. The four samples are representative of the material shipped to Peru for study. These samples were analyzed by ALS Labs in Vancouver to determine the composition and homogeneity of the material being shipped. The results were as follows:

ALS Minerals

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
www.alsglobal.com

To: BOREAL AGROMINERALS INC.
PO BOX 893
DOWLING ON P0M 1R0

Page: 2 - A
Total # Pages: 2 (A - D)
Plus Appendix Pages
Finalized Date: 7- MAR- 2017
Account: BAISEMMT

CERTIFICATE OF ANALYSIS SD17034648

Sample Description	Method Analyte Units LOR	WEI- 21 Recvd Wt. kg 0.02	ME- MS81 Ba ppm 0.5	ME- MS81 Ce ppm 0.5	ME- MS81 Cr ppm 10	ME- MS81 Cs ppm 0.01	ME- MS81 Dy ppm 0.05	ME- MS81 Er ppm 0.03	ME- MS81 Eu ppm 0.03	ME- MS81 Ga ppm 0.1	ME- MS81 Gd ppm 0.05	ME- MS81 Hf ppm 0.2	ME- MS81 Ho ppm 0.01	ME- MS81 La ppm 0.5	ME- MS81 Lu ppm 0.01	ME- MS81 Nb ppm 0.2
S895301		1.86	524	278	10	0.79	7.79	3.09	4.62	12.8	13.35	5.2	1.30	139.0	0.30	80.1
S895302		2.72	535	304	10	0.67	8.21	3.12	5.07	11.7	14.70	5.0	1.37	153.0	0.32	80.8
S895303		2.44	505	314	10	0.81	8.59	3.32	5.24	12.0	15.10	4.5	1.44	158.0	0.32	87.0
S895304		2.96	509	278	10	0.87	7.74	3.06	4.65	13.2	13.45	5.4	1.31	137.5	0.31	74.7

ALS Minerals

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Page: 2 - B
Total # Pages: 2 (A - D)
Plus Appendix Pages
Finalized Date: 7- MAR- 2017
Account: BAISEMMT

CERTIFICATE OF ANALYSIS SD17034648

Sample Description	Method Analyte Units LOR	ME- MS81 Nd ppm 0.1	ME- MS81 Pr ppm 0.03	ME- MS81 Rb ppm 0.2	ME- MS81 Sm ppm 0.03	ME- MS81 Sn ppm 1	ME- MS81 Sr ppm 0.1	ME- MS81 Ta ppm 0.1	ME- MS81 Tb ppm 0.01	ME- MS81 Th ppm 0.05	ME- MS81 Tm ppm 0.01	ME- MS81 U ppm 0.05	ME- MS81 V ppm 5	ME- MS81 W ppm 1	ME- MS81 Y ppm 0.5	ME- MS81 Yb ppm 0.03
S895301		109.5	30.2	48.9	17.70	2	2390	8.2	1.67	6.99	0.37	1.79	237	1	31.5	2.20
S895302		120.5	33.1	47.2	19.10	2	2790	8.7	1.76	6.21	0.38	2.08	255	245	33.7	2.25
S895303		124.5	34.6	48.8	19.75	2	2830	10.4	1.87	6.03	0.40	2.36	234	<1	35.0	2.28
S895304		110.0	30.4	55.2	17.85	2	2220	6.7	1.66	6.83	0.37	1.29	262	<1	31.6	2.08

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Page: 2 - C
Total # Pages: 2 (A - D)
Plus Appendix Pages
Finalized Date: 7- MAR- 2017
Account: BAISEMMT

CERTIFICATE OF ANALYSIS SD17034648

Sample Description	Method Analyte Units LOR	ME- MS81 Zr ppm 2	ME- ICP06 SiO2 % 0.01	ME- ICP06 Al2O3 % 0.01	ME- ICP06 Fe2O3 % 0.01	ME- ICP06 CaO % 0.01	ME- ICP06 MgO % 0.01	ME- ICP06 Na2O % 0.01	ME- ICP06 K2O % 0.01	ME- ICP06 Cr2O3 % 0.01	ME- ICP06 TiO2 % 0.01	ME- ICP06 MnO % 0.01	ME- ICP06 P2O5 % 0.01	ME- ICP06 SrO % 0.01	ME- ICP06 BaO % 0.01	OA- GRA05 LOI % 0.01
S895301		255	27.2	6.01	9.84	26.8	3.22	2.65	1.17	<0.01	0.98	0.18	2.50	0.28	0.06	17.80
S895302		261	22.6	4.49	9.90	30.5	3.13	2.29	1.00	<0.01	0.90	0.19	2.71	0.32	0.06	20.3
S895303		246	21.9	4.48	10.15	31.7	3.34	2.11	1.01	<0.01	0.98	0.20	3.04	0.34	0.06	20.1
S895304		281	29.6	5.92	10.90	25.8	3.54	2.58	1.16	<0.01	1.08	0.19	2.57	0.26	0.06	15.90

4. **Background and Chronology of Boreal's Geoscience Research in Peru**

By way of background, Boreal has been working in Peru for the past 3 years in an effort to develop a market to sell its product known commercially as Spanish River Carbonatite or SRC. The current representative for Boreal in South America is Mr. Jose Anaya. Mr Anaya is a well-known agricultural businessman and researcher in Peru. Mr. Anaya has been working and developing Amazonian plants and superfoods for more than 20 years and has received numerous national and international awards for his work.

Mr. Anaya approached Boreal's management more than 3 years ago to understand the benefits of SRC and to determine whether its application would be beneficial to his work in the development of superfoods for commercialization. Mr. Anaya traveled to Mexico to meet with the Boreal's management team along with researchers from the government of Mexico (INIFAP, SAGARPA) and the universities of Chapingo and College of Post Graduates, to seek assistance for testing and understanding the science behind SRC. With the cooperation of Mexico and Boreal, Mr. Anaya commenced testing of SRC in 2017 and has been studying the effects of its application since that date on a variety of plant species. As part of this work, Boreal tested the SRC for suitability in the Peru field trials (particle sizing and geochemical analysis) and then proceeded to ship 41 tonnes of SRC product to Peru for Mr. Anaya's trials on various types of plant species.

Mr. Anaya tested the effect of applying SRC on the Sacha Inchi plant (Inca Inchi). Mr. Anaya has been working with Sacha Inchi for many years and was then conducting research on the means to improve the quality and yield of this plant. The resulting paper is titled: ***Effect of Application of Carbonatite in the Pistilated Floral Induction of Sacha (Inchi Pukenetia volubilis L***.

To describe the scientific testing conducted on this plant species, it is necessary to understand how the Sacha Inchi plant is grown. The Sacha Inchi plant is a vine that requires physical support (braces) to sustain itself and in normal circumstances, every knot of the Sacha Inchi plant produces a single (one) female flower. Mr. Anaya, in his research, was attempting to create multiple female flowers by employing floral induction techniques that would allow him to improve yields (as each female flower produces only a single (one) Sacha Inchi almond/nut).

After several years of attempting floral induction, Mr. Anaya and his team were unsuccessful in consistently generating multiple female flowers. However, after learning about SRC from the various scientific studies performed in Canada and Mexico Mr. Anaya decided to apply SRC to the Sacha Inchi plants to determine whether it could assist in sustaining the floral induction and generate multiple female flowers. After a very short trial period, he and his researchers in Peru discovered that the application of SRC during floral induction did in fact result in the consistent generation of multiple female flowers which in turn led to a significant increase in yield for the Sacha Inchi (Inca Inchi) plant.

Mr. Anaya began his trials with SRC with the small samples he brought with him from Canada during June/July of 2017. The overall experiments relied on field trials to support the findings. All of the samples came from the bulk sample obtained during January 2017.

The research paper "the Effect of Carbonatite in the Pistilated Floral Induction of Sacha Inchi" indeed states the study commenced in February 2015, however, the study commenced without the use of SRC. It was only after Mr. Anaya traveled to Canada during June and July of 2017 that he obtained the initial samples of SRC and began testing on a small scale that they were able to show the effects of SRC on the Sacha Inchi plant. The samples in the containers shipped in December 2017 were used for larger field trials which were incorporated into the study that took place during 2018 and concluded in 2019.

The report "The Effect of Carbonatite in the Pistilated Floral Induction of Sacha Inchi" is essentially broken up into 2 experiments:

Experiment 1 - Floral Induction using Benzyl Adenine (BA) {commenced February 2015)

Experiment 2 - Floral Induction with SRC {commenced after July 17, 2017 upon receipt of bulk sample}

Our understanding is that using BA induces and promotes floral induction to varying degrees based on the amount of BA applied. However, when SRC is added, it demonstrated that greater yields of Sacha Inchi were obtained.

Mr. Anaya is continuing the research on several additional plant species with SRC. In the interim Boreal is advised that Mr. Anaya continues to achieve the SRC benefits for the Sacha Inchi plant with his own agricultural production in Peru. The results of his testing are included in the attached presentation and the research paper written in conjunction with the government of Peru (IIAP, Peru Innovate) and others.

On a final note, Mr. Anaya traveled to Mexico in September 2018, along with members of the Boreal executive and Canadian University researchers, to present his findings and share his learnings with various academics and researchers from Mexico and Canada Mexico at meetings with researches from Mexico and Canada.

The following is a chronological summary of the project from obtaining the sample through to the publication of the research done on SRC in Peru:

- Bulk sample taken from Boreal Mine during January 2017
- Laboratory analysis for SRC was completed March 2017
- Jose Anaya traveled to Canada June 22nd – June 26th, 2017 and July 13 – July 17th, 2017 acquired small quantities of SRC samples for laboratory and small-scale testing in Peru
- Larger samples shipped to Peru, December 2017 for field trials (2 containers)
- Preliminary results of the Effect of Carbonatite in the Pistilated Floral Induction of Sacha Inchi was presented in Mexico during September 2018
- The research study demonstrating "the Effect of Carbonatite in the Pistilated Floral Induction of Sacha Inchi" with Innovate Peru concluded February 2019
- Results of the study were published after February 2019

EFECTO DE APLICACIÓN DE CARBONATITA EN LA INDUCCIÓN FLORAL PISTILADA DE SACHA INCHI (*Plukenetia volubilis* L.)

EFFECT OF APPLICATION OF CARBONATITE IN THE PISTILATED FLORAL INDUCTION OF SACHA INCHI (Plukenetia volubilis L.)

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2. Agroindustrias Amazónicas: jay@incainchi.com

ABSTRACT

This study evaluated the effects of four doses of benzyladenine, with a frequency of three applications Plukenetia volubilis L. plants in bloom. The floral structure is a monoecious hermaphrodite system, inflorescences with unisexual flowers. Staminate and pistillate flowers present, being the greater amount distal staminates grouped in knots and being single in the basal 1-2 pistillate flowers per inflorescence. The increase in the number of pistillate flowers is essential to achieve higher performance in growing sacha inchi. The application of benzyl adenine (BA) was converted in staminate flowers and pistillate about 4 to 10% of the fruits developed pistillate flowers induced. Treatment with various concentrations of BA was between 1-58.8 female flowers per inflorescence reached the highest average of 58.8 to 40 mg / L treatment with BA.

The number of poly pistillate inflorescences by branches reached values of 0-14.8, with the highest average 14.8 to treatment with 40 mg / L with BA. The average number of fruits per inflorescence achieved was 5.2 in plants treated with 20 mg / L compared to 1.0 in control plants. The results obtained in this study determined that BA is a growth regulator in plants with pistillate potential to induce flowering and fruiting promote greater Sacha inchi plant.

In the second experiment, **the effect of carbonatite (SRC) associated with floral induction was evaluated**; Three treatments were used: T1: Carbonatite + Floral Induction (200g / plant); T2: Carbonatite (200g / plant) and T3: Control, which were distributed under the Design of Complete Block at random with three treatments and three repetitions, the genetic material used was the Misquiyacu ecotype (name of place of origin). In the variables flowering initiation and stem diameter, no significant statistical differences were found between the treatments. The treatment T1, Carbonatite + Floral Induction statistically surpassed the other treatments under study for the variables: number and weight of fruits and yield of seeds per hectare, achieving 4,482 kg ha-1, 2,682 kg ha-1 and 989.31 kg ha-1, respectively. **Therefore, for the acid soil conditions where the test was conducted, it demonstrates that by applying carbonatite (SRC), greater yields can be obtained**.

Key words: Plukenetia volubilis, flowering, pistillate, staminate, carbonatite

INTRODUCTION

The sacha inchi (Plukenetia volubilis Linnaeus), a native species of the Amazon is characterized mainly by being an important source of omega 3, since it has almonds with a higher concentration of essential fatty acids than any other known species in the world,

which is why the international market for this producto has been increasing significantly in recent years (Porras, 2005).

The sexual system is monoede, hermaphrodite inflorescences with unisexual flowers. They have staine and pistilated flowers, with the stamiates grouped into distal knots and the pistilates found solitary in the basal part, rarely found in groups of 2 or 3. The inflorescence has a conical appearance (the stinled flower nipples at the bottom develop first more than the upper ones). Cachique 2006.

There are techniques for sexual reversal using growth regulators that can lead to changes in the plant's internal chemistry and hormonal balances that may be able to mask chemical interpretations of inherited sexual traits causing the opposite sex to be partially or completely expressed. There are also several factors that interact for success using these methods, which are the shape, place (on the plant), amount and frequency of application. Litwack, 2005

Considering the importance of sacha inchi in the process of domestication and the fact that a variety has not yet been released, this research was carried out with the aim of increasing the number of pistilated flowers by inflorescence using a regulator of growth in order to promote greater production of fruits in the plant, as an alternative to shortages of highly productive varieties.

MATERIALS AND METHODS

This work was developed in experimental fields of San pedro de Cumbaza, whose geographical coordinates are: Longitude 06-32-0.9-, Latitude 76-17-57-, and an altitude of 297 m.s.n.m. in the District of San Antonio de Cumbaza, Province and San Region of Cumbaza, Province and San Region, Province and San Region of Cumbaza, Province and San Region, Province and San Region Martin.

This study used a completely random block design (DBCA) with a factorial arrangement of 5 (dose) x 3 (frequency of application), consisting of 12 treatments, 3 repetitions and 3 plants per experimental unit. The plants were planted at a distance of 3 m to 3 m by a tutoring system on trellises, 108 uniform plants will be selected at the beginning of the flowering stage for each treatment.

A mother solution was prepared following the method described by Qiantang Fu & ZengFu Xu (2014), in which it mentions preparing the mother solution (1 mg / ml) of BA (Benciladenine).

Working solutions of various concentrations of BA (0, 10, 20, 30 and 40 mg/L) were sprayed onthe plants with a hand sprinkler, wetting the plants to the run-off point (approximately 300 ml BA of working solution per plant). The plants under treatment are sprayed with 300 ml of distilled water containing 0.05 % (v/v) of Tween - 20 and NaOH 1.28 mM (i.e. NaOH concentration equivalent to that of 160 mg/L of BA working solution). Spraying will be done according to the treatment established at dusk. The experiments began in early February 2015, evaluating the sgts parameters: Number of pistilated flowers/inflorescence, No. of poly inflorescence/branches, No. of fruits/inflorescence and No. of fruits/inflorescence/frequency of application.

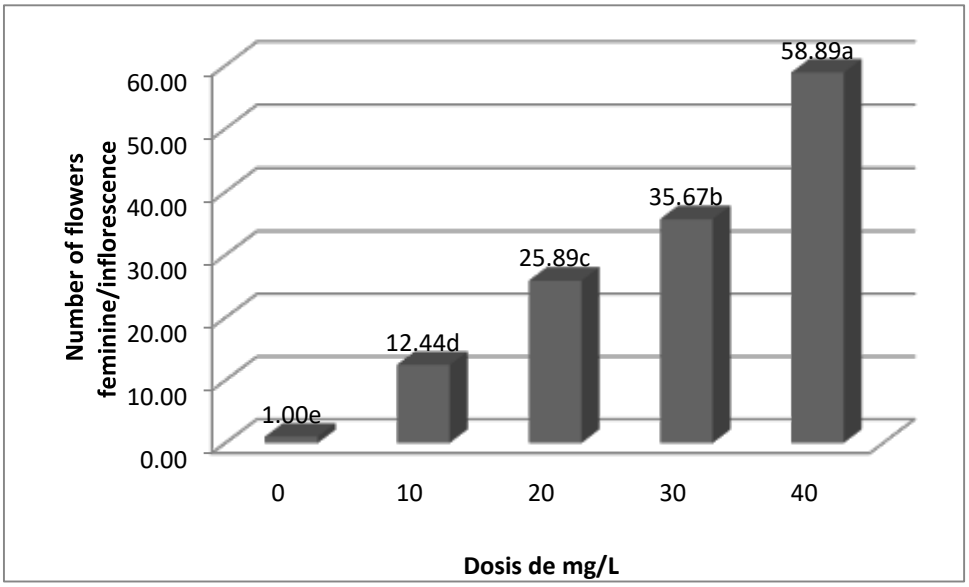
The data was analyzed by the analysis of variance and subjected to the Tukey test (p . 0.05) to determine the nature of the differences between treatments.

RESULTS AND DISCUSSION

1.1 Number of Flowers Pistilated by Inflorescence

Plants treated with BA managed to induce staminated to pistilated flowers as shown in Figure 1. After treatment with BA many pistilated flowers appeared in places where staminated flowers are normally placed. Each BA-treated inflorescence produced 12.4-58.9 pistilated flowers, while only 1 flower pistilated in the inflorescences of control plants. The number of pistilated flowers increased on average increasing BA doses, reaching an average of 58.8 to 40 mg /L.

Figure 1. Number of Female Flowers /Inflorescence



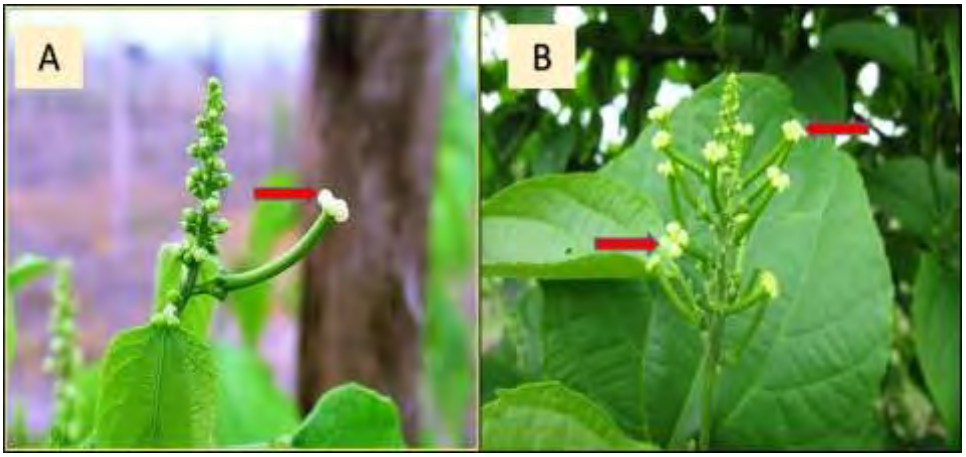
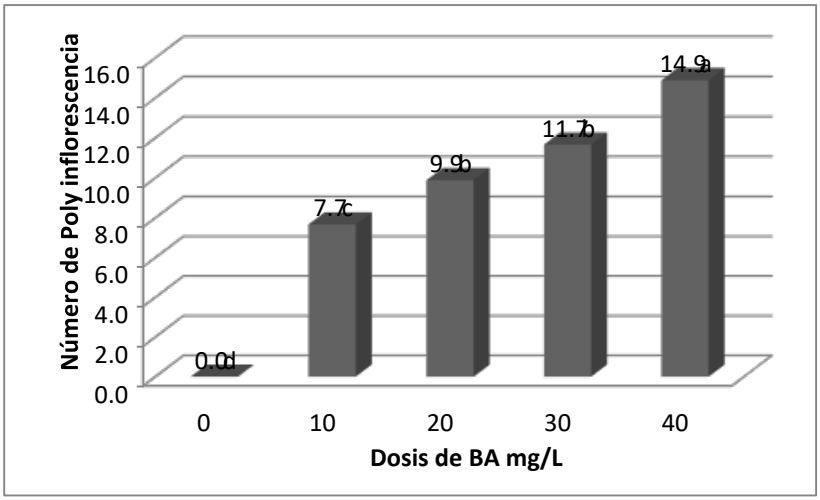


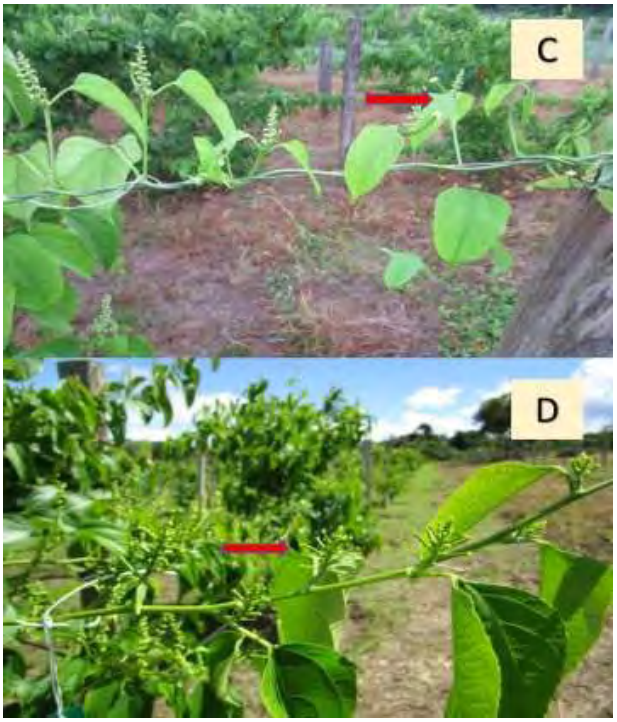
Figure A. Control Plant Inflorescence **Figure B.** Inflorescence of plants treated with 20 mg/L of BA

1.2 Number of Poly inflorescences pistilated / branches

Plants treated with BA managed to induce a greater number of pistilated/branch poly inflorescences, as shown in **Figure 2**. After treatment with BA. Each treated plant produced on average 7.7 - 14.9 poly inflorescence pistilated by branches, observing differences as the dose increased.

Figure 2. Number of Poly Female Inflorescences/Ramas





Treatments with high concentrations of BA (30 or 40 mg/L) resulted in the conversion in the vast majority of staminated flowers to pistilated flowers in the inflorescences. Most female flowers induced by 10, 20, 30 mg/L of BA treatment showed normal morphology.

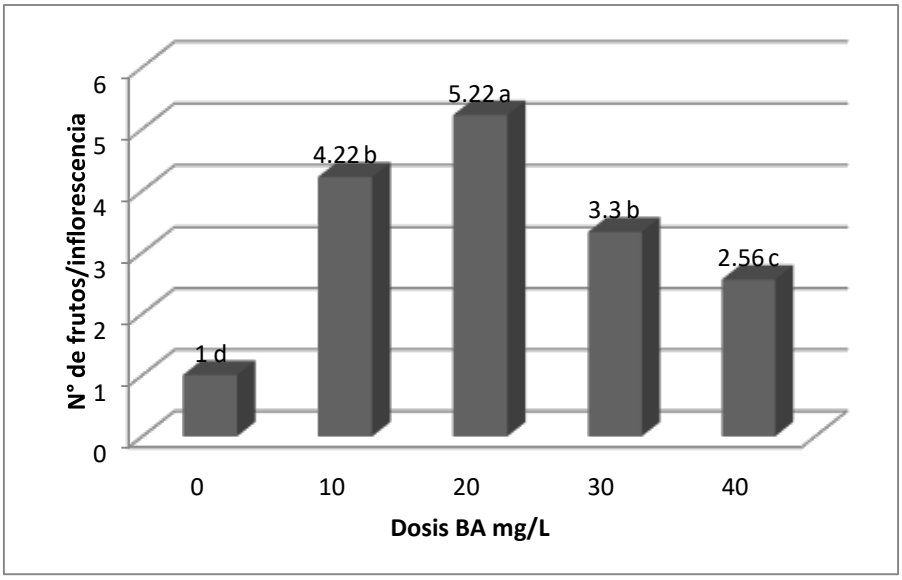
Treatment with high BA concentration (40 mg/L) resulted in an increase in the number of abnormal female flowers, although these treatments induced higher production of pistilated flowers than what low-concentration BA treatments did. Abnormal pistilated flowers induced by high concentration of BA had a curved style and/or a closed stigma. Some of the abnormal female flowers were shrouded in the petals and could not become fruits.

Numerous studies have shown that various phytohormones have stabilization or pistilization effects in various species. Ethylene proved to be the key hormone for determining feminization in cucumber (Ando et al., 2001; Grumet and Taft, 2011).

Giberélic acid reported having a masculinizing effect on spinach (Spinacia oleracea) (Chailakhyan and khryanin, 1978), but a feminization effect on Hyoscyamus niger and maize (Resende and Viana, 1959; Dellaporta and Calderón-Urrea, 1994). Auxina has been shown to have a feminization effect on Opuntia Stenopetala and Cannabis sativus (Heslop- Harrison, 1956; Orozco- Arroyo et al., 2012). But a masculinizing effect in Mercurialis annua (Hamdi et al., 1987).

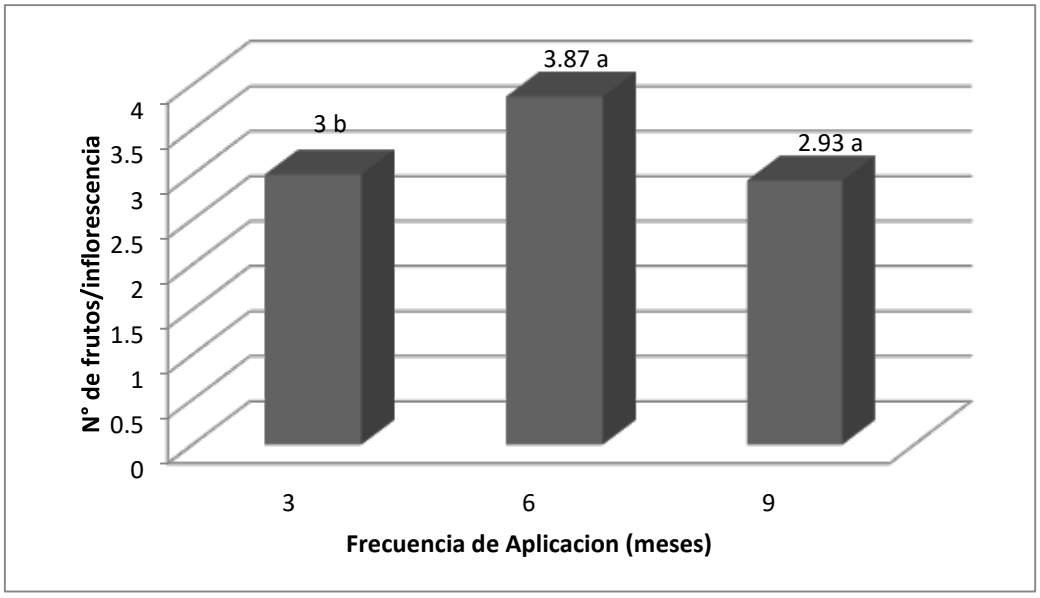
Figure 3. Number of Fruits/Inflorescence

The number of pistilated flowers is a critical determinant for the number of fruits in monoecious plants such as Sacha inchi. Approximately 4-10% of the pistilated flowers induced with BA develop edify fruits, resulting in an increase in the number of capsules relative to unapplied (control) plants.



An average of one fruit per inflorescence was produced per control plant inflorescence (**Figures 3 A and C**), while treatments where BA were applied resulted in 1-7 fruits per inflorescence, with an average of 5.2 fruits in the treatment of 20 mg/L of BA (**Figures 3 B and D**).

Figure 4. Number of Fruits / Inflorescence / Frequency of Application



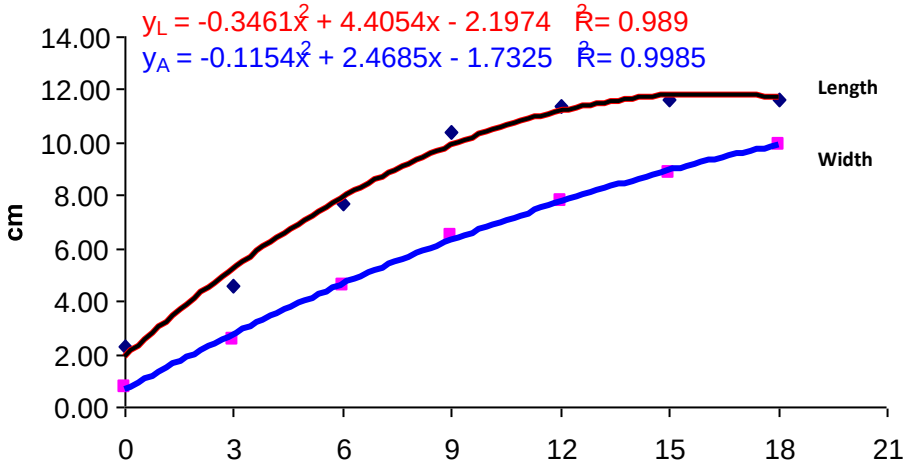
The number of pistilated flowers increased with increased BA concentrations, but fruit formation decreased as BA concentration Treatment with 20 mg/L of BA produced the highest number of fruits per fruitlessness increased. **Figure 3**.

With regard to the frequency of application for the number of fruits/Inflorescence (**Figure 4**) it is observed that treatments with an application frequency of 6 and 9 months; but for the practice it would be satisfactory every 6 months, since considering the stage of fruit development is every 5 months, you can reach 2 fruits induced per year, the same that are corroborated by Cachique (2006).

The results of this study indicate that cytokinin plays an important role in the development of pistilated sacha inchi flowers. Therefore, there is great potential to use this plant growth regulator to improve fruit yield by increasing the number of pistilated flowers in the culture of sacha ichi.

1.4 Foliar Growth

Taking the polynomial equation of the length and width of the leaf has to: Leaf length an R2 of 0.989, that indicates that 98.9% of the data conform to the proposed model in the leaf width an R2 of 0.9985, that indicates that 99.85 of the data are adjusted proposed model.



DAYS OF EVALUATION

Graph 01: Growth of leaf length and width

1.5. Days of Flowering

The variance analysis (**Table 07**) indicates that there are no significant differences between blocks and treatments; the coefficient of determination (R2) with 64.77 %, indicates that the application of carbonatite associated with floral induction is not relevant in terms of the flowering days of the Sacha Inchi, the coefficient of variability of 9.90% is quite tight, which corroborates the homogeneity between experimental units

Table 07: Analysis of variance for flowering days

F. de V.	G.L.	S.C.	C.M.	F.C.	Significance
Blocks	2	1507.76	753.35	3.12	N.S.
Treatments	2	270.70	135.35	0.56	N.S.
Error	4	967.25	241.81		
Total	8				

N.S: Not significant

R^2: 64.77 % C.V.: 9.90% X: 157.07

1.6. Stem Diameter

The results of the variance analysis (**Table 08**) indicate that there was no significant difference between blocks and treatments, their coefficient of determination (R2) with 72.65%, indicates that the application of carbonatite associated with induction is relevant

in how much to the diameter of the stems of the Sacha Inchi plant, with a variability of 8.49%, between the experimental units

Table 08: Analysis of variance for stem diameter

F. de V.	G.L.	S.C.	C.M.	F.C.	Significance
Blocks	2	18.16	9.08	4.38	N.S.
Treatments	2	3.86	1.93	0.93	N.S.
Error	4	8.29	2.07		
Total	8				

N.S: Not significant

R^2: 72.65 % C.V.: 8.49% X: 16.96

1.7. Number of fruits/ha/year of production

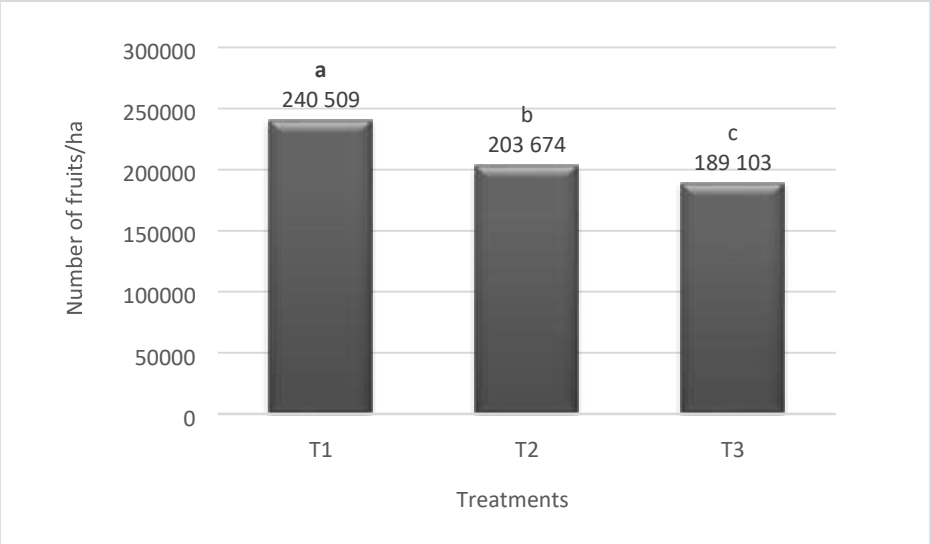
Table 09: Analysis of variance for number of fruits/ha/year of production

F. de V.	G.L.	S.C.	C.M.	F.C.	Significación
Blocks	2	1374482.8	687241.4	0.11	N.S.
Treatments	2	4211744165.5	2105872082.8	325.77	**
Error	4	25857018.5	6464254.6		
Total	8				

N.S.: Not significant **: Highly significant

R^2: 99.39% CV: 1.20% X: 211095.38 El

analysis of variance shows non-significant behavior between blocks and highly significant between treatments, their coefficient of determination (R2) with 99.39%, indicates that the application of carbonatite (SRC) associated with floral induction is relevant in the number of fruits, with a variability of 1.20% between experimental units.



Graph 04. Duncan significance test for fruit numbers/ha/year of production.

Graph 04 shows the Duncan significance test (alpha-0.05), on fruit number characteristics, it is observed that the T1 treatment has the highest number of fruits, being statistically different from the other treatments. The T2 treatment obtained 203 674 fruits per hectare, and finally the T3 treatment with 180 103 fruits, obtained the lowest number of fruits

1.8. Weight of 100 seeds

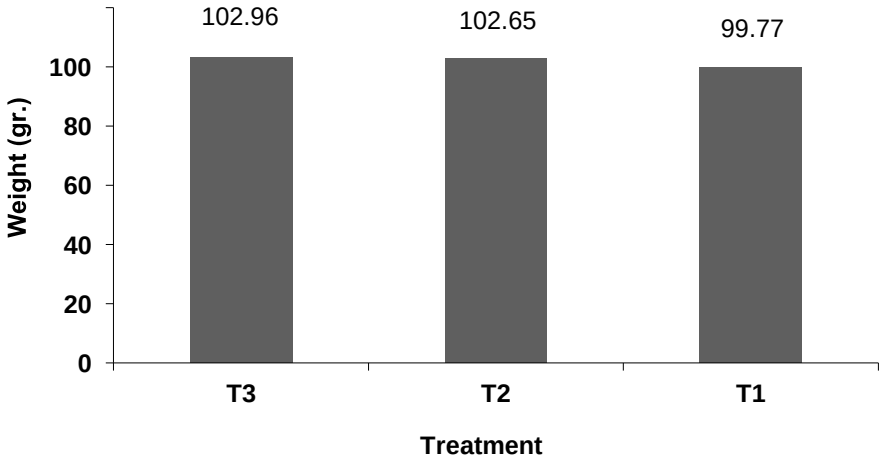
Table 11: Analysis of variance for 100 seed weight

F. de V.	G.L.	S.C.	C.M.	F.C.	Significance
Blocks	2	2.30	1.15	1.23	N.S.
Treatments	2	18.65	9.33	9.94	*
Error	4	3.75	0.94		
Total	8				

N.S.: Not significant *: Significant

R^2: 84.81 % C.V.: 0.95 % X: 101.80

The results of the variance analysis show, not significant for block effects and significant differences between treatments, their coefficient of determination (R2) with 84.81%, indicates that the carbonatite (SRC) associated with floral induction is relevant in 100 seeds per treatment weight, with a variability of 0.95% between experimental units.



Graph 06. Duncan significance test for hundred seed weight

In **Graph 06** the Duncan significance test (alpha 0.05) of the characteristic weight of one hundred seeds is presented, noting that:

There is no statistical difference between the treatments T3 and T2 with 102.96 gr. and 102.68 gr. of the hundred seeds evaluated, T1 that has the lowest weight at 99.77 gr. on average.

1.9. Seed/ha/year of production yield

Table 12: Analysis of variance for year of production yield (kg/ha) per year

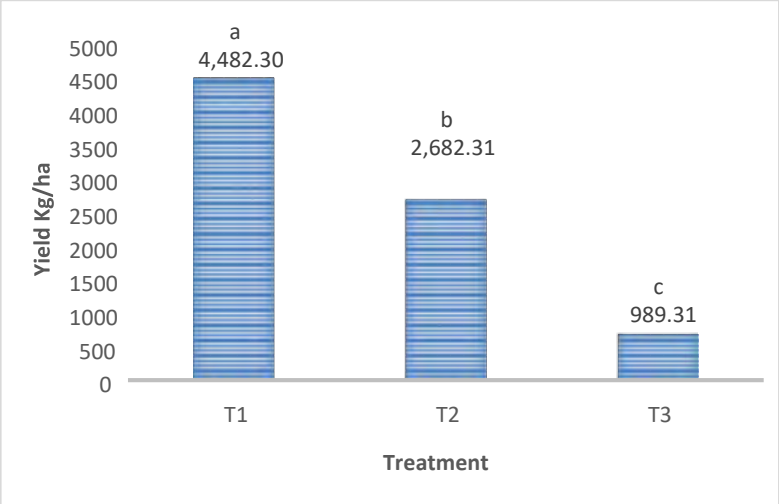
F. de V.	G.L.	SC.	C.M.	F.C.	Significance
Blocks	2	108.75	54.38	2.68	N.S.
Treatments	2	165337.42	82668.71	4071.89	**
Error	4	81.21	20.30		
Total	8				

N.S.: Not significant **: Highly significant

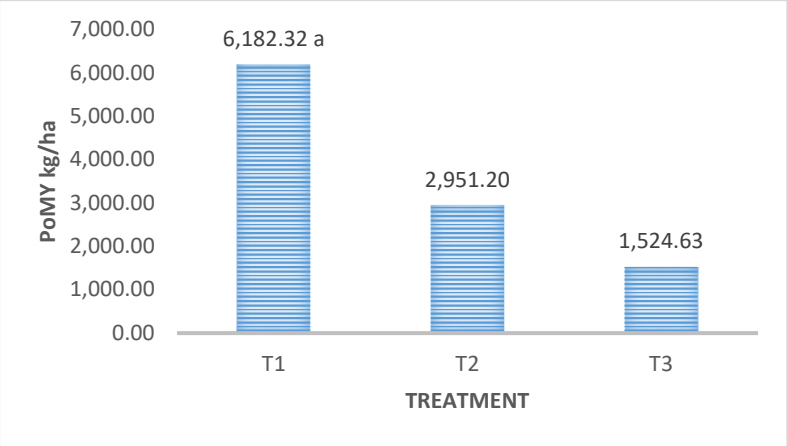
R^2: 99.95 % CV: 0.56 % X: 798.42

The results indicate that there is high statistical significance between treatments, due to the application of carbonatite (SRC) associated with floral induction. Its coefficient of determination (R2) with 99.95%, indicates that the evaluated treatments are relevant in terms of the yield of Sacha Inchi, with a variability of 0.56% between experimental units.

Graph 07. Duncan significance test for kg/ha performance of average values



Graph 08. Duncan significance test for performance in kg/ha of máximum potential values



RECOMMENDATIONS

- Perform other tests validating the effect of Benzyladenine (BA), to determine whether cytokinin can improve seed yield in sacha inchi.

- Evaluate production yield by applying higher doses of carbonatite (SRC) on a commercial scale and evaluate the effect of micro elements to increase coagulation in induced plants

ACKNOWLEDGEMENTS

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Demonstration Plot Protocol

Overview (system applicable to all crops in general)

Objective: That the counterparts of the company ***Agroboreal SAC*** and the selected farmer have the opportunity to execute, implement and live the experience of introducing a new and novel technique of organic fertilization, taking as a product the use of the SPANISH RIVER **CARBONATITE**. The purpose of this project is to test the efficiency in terms of modifying the physical/chemical components and especially the pH of the soil substrate, with the use of **SPANISH RIVER CARBONATITE in order to quantify the** benefits in the absorption of nutrients and their natural use related to development, production and productivity, being able to establish all the parameters that are created suitableto evaluate,the same ones that were in the ***Field Part Sheet*** which will be provided by **Agroboreal SAC.**

Fundamental principles of the demonstration plot:

- Fertilize the soil with the use of organic materials from the **SPANISH RIVER CARBONATITE, maximizing** the resources of the project's soil substrate.
- Produce healthy and vigorous plants **and crops.**
- Improve the **pH of soils** with a tendency to turn them into neutrals.
- Improve the ***physical/chemical*** conditions of soils avoiding their degradation and deterioration, maintaining a positive relationship with the environment ***and ecosystem.***
- Increase the **production and productivity** of the selected crops, improving the quality of the finalproduct, both in ***color, aroma*** and ***flavor.***
- Improve the **economic** situation of the farmer by the final result that he will obtain in the sale of products of better quality and in greatervolume.

Farmer's Selection:

The farmer must comply with all the conditions and procedures established in the protocol, be responsible, proactive, entrepreneurial and innovative.

The farmer must mention whether it is the start of the campaign or at what time the crop is located;it is not recommended to apply during flowering. The preparation of the ground in a homogeneous manner so that ***all the assessments defined and assigned, along with a control plot.***

The parameters to be measured **are *pH, chemical and physical concentrations etc.*** This data can be leveraged to determine the results of all the benefits of **SPANISH RIVER CARBONATITE** in a***"before" and an "after."*** Once these work has been completed and at the end of the project implementation, it will be evaluated and quantified plants treated with **SPANISH RIVER CARBONATITE** in its final result, comparing it to a control crop. Cultural work should be the same throughout the area allocated in terms of irrigation, entomological, phytopathological, foliar treatments, etc.,products onboarding as aspecific nematicides or fungicidesshould also be implemented throughout the project area,it is established that the difference will be given only in the plants where **SPANISH RIVER CARBONATITE was applied.**

Procedure: the representative of Agroboreal and the counterpart named by the farmer for the management, driving and control of the demonstrative plot, subscribe to this ***protocol*** in compliance with the provisions of it ***and leave in writing in the part or field book the designated managers;***for his part the representative of***Agroboreal SAC***, will be responsible for overseeing and co-opwith the contrapart, for which it will expose the operational plan.**Agroboreal SAC will provide the SPANISH RIVER CARBONATITE product,at a promotional price,in coordination and agreement with theagricultor chosen,**by common accord, the terms of its acquisition. Queda established that the farmer will bear labor costs in crop management and other additional costs required for cultivation during the project (tothe pesticide, irrigation, weeding, etc.)and the materials you haveavailable on the siteand any other material used,or expense incurred.
The representative of ***Agroboreal SAC*** and the responsible counterparty appointed by the selected farmer shall practice the following protocol on the demonstrative plot:

- **Location and demarcation** of the demonstrative plot.
- Definition of the ***crop chosen*** for the demonstrative plot.
- Assigned area express in ***Plant No., Number of Stripes, Hectares***.
- Soil ***sampling*** and sampling for **initial** qualitative/quantitative analysis.
- ***Identification, marking and counting*** of the plants involved in the demonstrative plot.
- ***identification, marking and counting*** of witness plants.
- ***Filling and emptying data*** in the initial part or field notebook.
- **Define the evaluation criteria** regarding the use of the SPANISH **RIVER CARBONATITE,** define what you want to check.
- ***Floor samples similar at the beginning*** to make the respective comparison of the soil substrate situation at the end of the project.
- **SPANISH RIVER CARBONATITE, *will be incorporated into the crop*** plant by plant, in line running or as the case may be, indicating the quantity of the active product.

- ***Application dose:*** The recommended dose dthe Spanish **River Carbonatite** is 1,100 kilos per hectare, these amounts may vary depending on the soil analysis and what is intended to evaluate and quantify.
- **Identify the irrigation system:** if it is technified indicate which or if it is by gravity, the frequency of irrigation and amount of water that the plants receive should be taken into account.
- **Projected duration of the project to be developed.** Definethe start date and datethe project's near-end of the crop.
- For each type of crop, the form of application of the product is specified in the field book

Operation:

- **Explanatory initiation,delivery of the manual of use of carbonate** and **documentation** by **Agroboreal SAC,** where the respective bases and parameters of thepdemonstrative arcela,as well ascoordinating the different activities to be carried out during the development of the project, establishing and defining theresponsibilities of each participant.
- Delivery of the product Spanish River Carbonatite to the Representative, with the documentation of the case, according to the amount established to perform the field tests of the given crop.
- Install at the beginning of the work a Panel of at least one meter fifty by two meters, in a place well chosen for its best location to visualize the test that is carried out in that space designated as a demonstration plot. In this panel we must mention the name of the farm, of the company Agroboreal, the name of the product: **SPANISH RIVER CARBONATITE,** the name of the entity(s) that participate as allies to be the case and the name of the crop with which it is made in experi ment
- **Visits inspection**is : It**is**established that normally **two** visits to the project will be made by the representative of ***Agroboreal SAC,*** the first at the beginning of the project, and the second at the end of the project, for the corresponding evaluation and results.If this is the case, thecounterparty will request the immediate presence of the**Representative**of**AgrobSAC.**
- **Filling out the part or field notebook,** this document will be provided by ***Agroboreal SAC,*** and will be filled in coordinationwith the assignedmanager: **contraparte.**
- **Formulation of the final document:** in the final part of the field notebook will be put the results, data and responses obtainedfrom the field evaluation that have been duly recorded, must be authenticated by the represent **Agroboreal Sac and the Counterpart.**
- **The farmer** will make a photographic record of the different stages of crop management, from the start to the end of the campaign.**Agroboreal SAC**will make a film recordof the demonstrative plot with the farmer's testimony.

Expected Result:

In the end the project counterparts will have gained practical and reliable experience, obtained from the information and results of the technologies applied in the demonstrativeplot, with the use of the **SPANISH RIVER CARBONATITE,** enforcing that whenchecking, the benefits obtained havearepetitivecharacter, in a massive and around the field, as the expected results would be quantified, making it possible to have the credibility proposed in the project objectives

Sign of responsibility and commitment to compliance with this document

In

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General Manager Commercial Manager The Farmer
AgroBoreal SAC AgroBoreal SAC DNI:
DAYS N ° 08263660 DAYS 10553218

Calculo aproximado de cantidad de SRC por planta

SCR= Spanish River Carbonatite

Cantidad de fertilizante SRC por hectarea: mil cien kilos

Cantidad de SRC por planta: se determina dividiendo mil cien kilos por hectarea entre la cantidad de plantas por hectarea (densidad del cultivo)

Bases para Parcelas Demostrativas: Determinar el area de la parcela y el numero de plantas; aplicar la dosis por planta

N°	Cultivo	Variedad	Plantas por Hectarea	Cantidad de Plantas para Parcela Demostrativa	Cantidad de SRC por Planta	Cantidad de SRC por Parcela	N° Probable de Parcelas Demostrativas	Cantidad de Kgs.de SRC para las PD	Zona de Desarrollo
1	ARROZ								
2	BANANO	Gran Nane	2,500 plts	100 plts.	0.500 kgs.	50.0 kgs.	04 P-D	200	San Martin/Piura
3	CACAO	Cundeamor	800 plts	100 plts.	1.375 kgs.	138.0 kgs.	04 P_D	550	San Martin/Cusco/Junin
4	CAFÉ	Caturra/Catahuí	5,000 plts	500 plts.	0.220 kgs.	110.0 kgs.	04 P-D	440	Junín/San Martín/Cusco
5	CAÑA								
6	ESPARRAGO	Atlas/Cipres	18,000 plts	5 hileras de 100 plts c/u	0.061 kgs.	305.0 kgs	02 P-D	610	Trujillo/Ica
7	GIRASOL	Ts 450/Texas 455	50,000 plts	5 hileras de 100 plts. c/u	0.022 kgs.	11.0 kgs.	01 P-D	11	San Martín Tarapoto
8	MACA	maca sp.	20,000 plts	5 hileras de 100 plts. c/u	0.055 kgs.	28.0 kgs.	3 P-D	84	Junin/ Huánuco
9	MANGO	Haden/Tommy Atkins	416 plts	100 plts.	2.650 kgs.	265.0 kgs.	03 P-D	795	Piura/ San Martin
10	Maiz Amilaceo	Gigante Cusco/Choclos	60,000 plts	5 hilers de 100 plts. c/u	0.018 kgs.	90.0 kgs.	02 P-D	180	Cuzco/Lima
11	Maiz Morado	Canteño/Caraz/Cusco	50,000 plts	5 hilers de 100 plts. c/u	0.022 kgs.	11.0 kgs.	03 P-D	33	Lima/Cusco/Huaraz
12	MANDARINO	Ciricos en general	286 plts	30 plts.	3.850 kgs.	116.0 kgs..	04 P-D	464	Lima/Ica/Piura
13	OLIVO	Sevillana/Barnea	300 plts	50 plts.	4,000 kgs.	200.0 kgs.	04 P-D	800	Lima/Arequipa/Tacna
14	PALTO	Fuerte/Hass	625 plts	50 plts.	1.760 kgs	88 kgs.	04 P-D	352	Trujillo/Lima/Ica
15	PAPA								
16	PAPAYO	Criolla/Maragol	1,600 plts	100 plts.	1.600 kgs	160 kgs.	04 P-D	640	San Martin/Junin
17	PIÑA	Golden/Cayena	30,300 plts	5 hileras de 100 plts. c/u	0.036 kgs	18 kgs.	04 P-D	72	Junin/San Martin/Cusco

Section C. Industrial Mineral Marketing ("IMM")

1. Description of IMM Activities

Boreal completed many industrial mineral marketing activities related to the sampling for the purposes of geoscience activities and the Peru Report. The Peru Report and related IMM initiatives are part of the overall effort to determine the economic viability of SRC as an alternative to conventional fertilizers.

Boreal's marketing activities and efforts have been very extensive. These efforts have included visits to the countries of Mexico, Peru and Uruguay to meet with their Universities, Governments, and private companies in order to explain to them the benefits of Spanish River Carbonatite and to explore the ways and means to create increase demand and markets for SRC. This report specifically describes Boreal's marketing and development efforts in Peru.

As a prerequisite, governments require the empirical evidence to demonstrate the efficacy of the agro/industrial minerals that we are marketing and therefore, a great deal of effort and expense was incurred in order to provide them the necessary information to convince them to purchase the SRC material.

Some of the costs incurred to market our agro/industrial minerals include:

- Cost of shipping samples to Mexico, Peru, Uruguay and China;
- Cost of assays and chemical analysis of samples;
- Travel costs for Boreal personnel, university professors, consultants who attended the meetings in countries (particularly Mexico) in order to substantiate evidence and provide support;
- Cost of research studies; geological, geophysical, and other geoscientific work to support the research necessary to help market our agro/industrial minerals;
- Costs to obtain licenses, duty, legal etc. to ship material into foreign countries in order to perform the research required in support of marketing;
- Actual cost of research work performed and paid for by Boreal to support the company's marketing efforts. These costs include labour, supervision, laboratory research, supplies, reporting and costs associated with obtaining empirical evidence to support the marketing of the Boreal products;

- Actual cost of research for laboratory, greenhouse and field testing of the Boreal sampled material on various soils (acidified, heavy metals, and other soils) as well as on various agricultural products such as fruits and vegetables.

In 2018, a delegation from Boreal, including Boreal's South American representative Mr. Anaya, attended meetings with government officials, potential clients and university researchers at two Agricultural Exhibitions in Peru. The first conference, "*Agromin 2018 Exhibition*" in Trujillo, Peru took place June 6-8. The second, "*Techno Agro Exhibition*", also in Trujillo, was from October 25 to 27. Both conferences were attended by Mr. Anaya and other Boreal personnel. These marketing efforts were a great success for Boreal as, Boreal, through Mr. Anaya, received a contract and began trials with a large chicken producer in Peru to utilize Spanish River Carbonatite as a mineral supplement. This is a new market which could expand into mineral supplements for cattle as well.

Perhaps the most exciting prospect is the government of Peru partnering with Boreal to use SRC for heavy-metal sequestration in soils. There is currently a problem with the cacao crop in Peru in that cadmium uptake is too high making it difficult for the country to export and sell the crop. Trials are ongoing. However, preliminary results have demonstrated the efficacy of SRC for this type of soil-remediation. This application has great potential in many other jurisdictions.

Boreal has the capacity and are ready to supply bulk SRC orders to Peru by ship from LaCloche Island in Ontario (25,000 tonnes per vessel).

2. Boreal Presentation in Peru (below)

SPANISH RIVER CARBONATITE & SUPERFOODS OF PERU

INCA INCHI - MACA - YACON -CAMU CAMU - MAIS MORADO

PRESENTATION OF SPANISH RIVER CARBONATITE

JOSE ANAYA YABAR SEPTEMBER 2018

IN THE SEARCH FOR AN ORGANIC FERTILIZER TO EFFICIENTLY FEED THE INCA INCHI CROPS, A PROLEQUIOUS OLEAGINOSA PLANT, ORIGINATING FROM THE JUNGLES OF THE PERUVIAN AMAZON, I CAME TO MEXICO CITY IN MAY OF 2016, HAVING THE PRIVILEGE TO LEARN ABOUT SPANISH RIVER CARBONATITE, A NATURAL AND MARVILLOUS FERTILIZER.

BOREAL AGROMINERALS OF CANADA HAS GIVEN ME THE RESPONSIBILITY TO REPRESENT THEM IN SOUTH AMERICA, IN ORDER TO INTRODUCE THE SPANISH RIVER CARBONATITE PRODUCT FOR THE AGRICULTURAL INDUSTRY ON THIS CONTINENT. THE ELECTED STRATEGY FOR THIS MISSION BEGINS IN PERU, A COUNTRY WITH GREAT BIODIVERSITY AND ORIGIN OF MANY FOODS AND VERY VALUABLE MEDICINAL PLANTS FOR FOOD AND WORLD HEALTH, OF WHICH LESS THAN 10% ARE KNOWN IN THE WORLD.

PERU
IN
SOUTH AMERICA

- THE BEGINNING
- THE STUDY OF THE STRATEGY
- THE STUDY OF THE LOGISTICS

PERU HAS 3 LARGE NATURAL REGIONS
COSTA (COAST), SIERRA (MOUNTAIN RANGES), SELVA (JUNGLE)

Selva
Región de vegetación tropical que corresponde a la Amazonía peruana donde se encuentran las más grandes Reservas Naturales del Perú.

58% del territorio

12% de la población

Costa
Cerca de 3000km de desiertos, playas, además de extensos y fértiles valles.

11% del territorio

52% de la población

Costa
Norte: sol todo el año.
Costa central y sur: temperatura templada, sin precipitaciones, húmeda y con alta nubosidad.

Sierra
Clima seco y templado, con grandes variaciones de temperatura en un mismo día.

Selva
Clima húmedo y tropical, con altas precipitaciones.

Sierra
Región determinada por la Cordillera de los Andes, alcanza los 6 768 mnsm (22 204 pies) en la cumbre del nevado Huascarán.

30% del territorio

36% de la población

THE COAST (LA COSTA)

IT COMPRISES 11% OF THE TERRITORY; DESERT AND FERTILE VALLEYS FORMED BY RIVERS THAT FLOW FROM THE ANDEAN MOUNTAINS

LOS DECIERTOS DE LA COSTA PERUANA

WITH THE DEVELOPMENT OF PUBLIC AND PRIVATE PROJECTS USING ADVANCED TECHNOLOGIES, LARGE PORTIONS OF THE COASTAL DESERTS ARE BEING CONVERTED TO MODERN AGRICULTURE. IN THESE DEVELOPMENTS, CARBONATITE HAS AN IMPORTANT ROLE AS A FERTILIZER AND SOIL IMPROVER

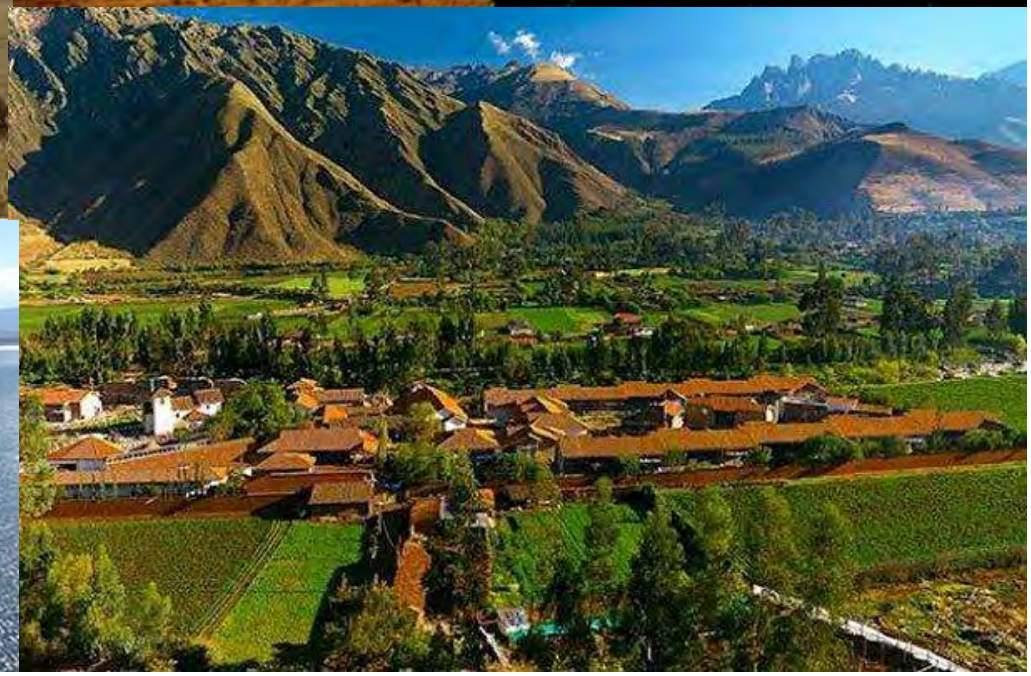
THE DESERT IS BEING TRANSFORMED TO PRODUCE HIGHLY PROFITABLE CROPS

RIVERS DESCEND FROM THE ANDES MOUNTAINS AND FORM FERTILE VALLEYS IN THE COASTAL DESERTS

THE MOUNTAIN RANGES (LA SIERRA)

IN 30% OF THE TERRITORY ARE FERTILE VALLEYS AND LARGE MOUNTAINS OF THE ANDEAN CORDILLERA


CORDILLERA OF THE ANDES

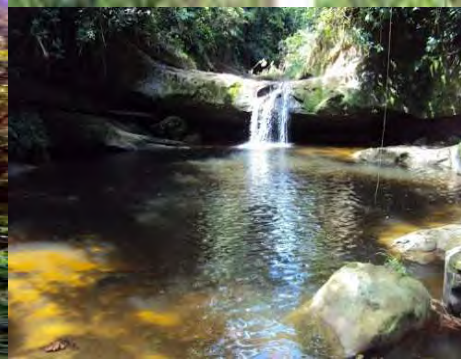


FERTILE ANDINO VALLEYS

THE JUNGLE (LA SELVA)

IN 59% OF THE TERRITORY ARE MOUNTAINS, TROPICAL FORESTS AND THE AMAZON RIVERS

THE EASTERN CORDILLERA WITH PEAKS BETWEEN 3,000 – 4,500 masl



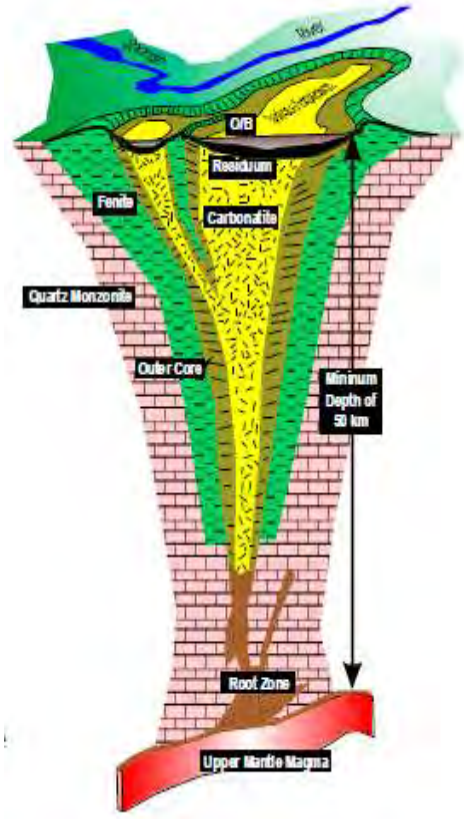

AMAZON RAINFOREST


THE AMAZONIAN PLAINS

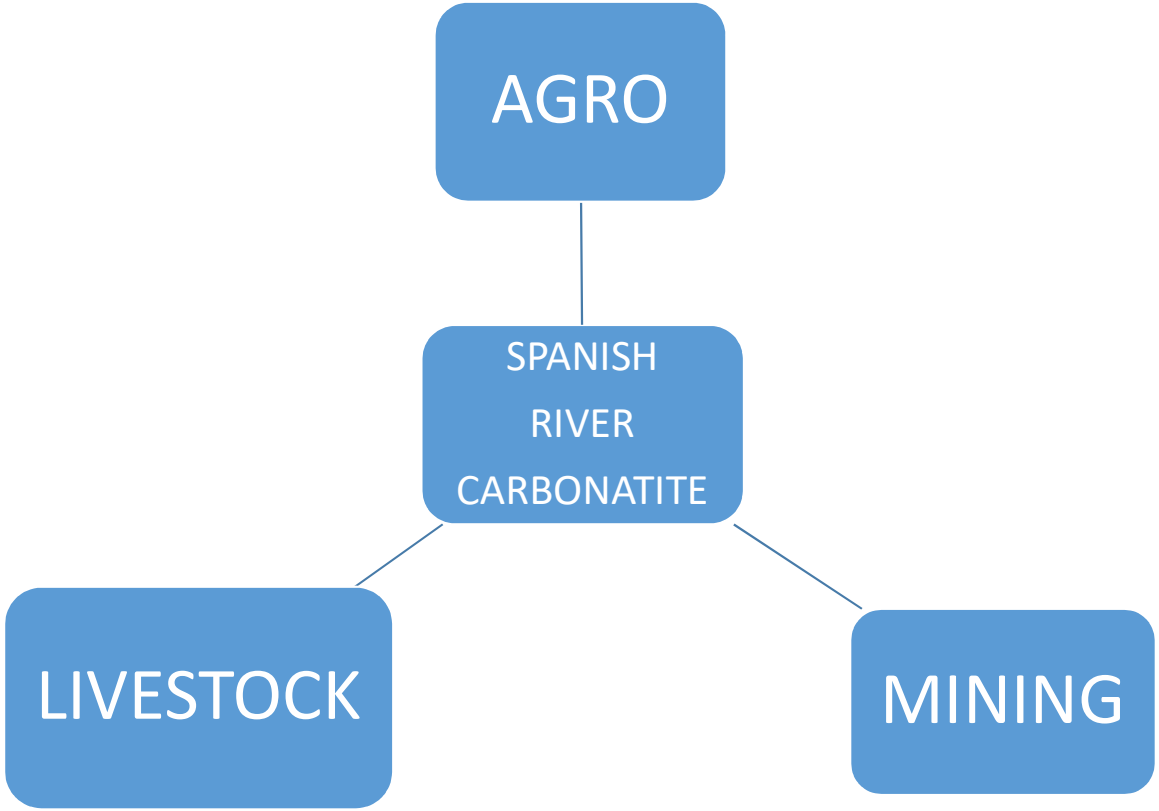
TO INTEGRATE SPANISH RIVER CARBONATITE FOR SYSTEMATIC USE IN AGRICULTURE, LIVESTOCK, AND MINING ACTIVITY, STUDIES AND TRIALS ARE BEING CONDUCTED IN FIRSTLY IN PERU, FOLLOWED BY OTHER COUNTRIES IN SOUTH AMERICA

SPANISH RIVER CARBONATITE

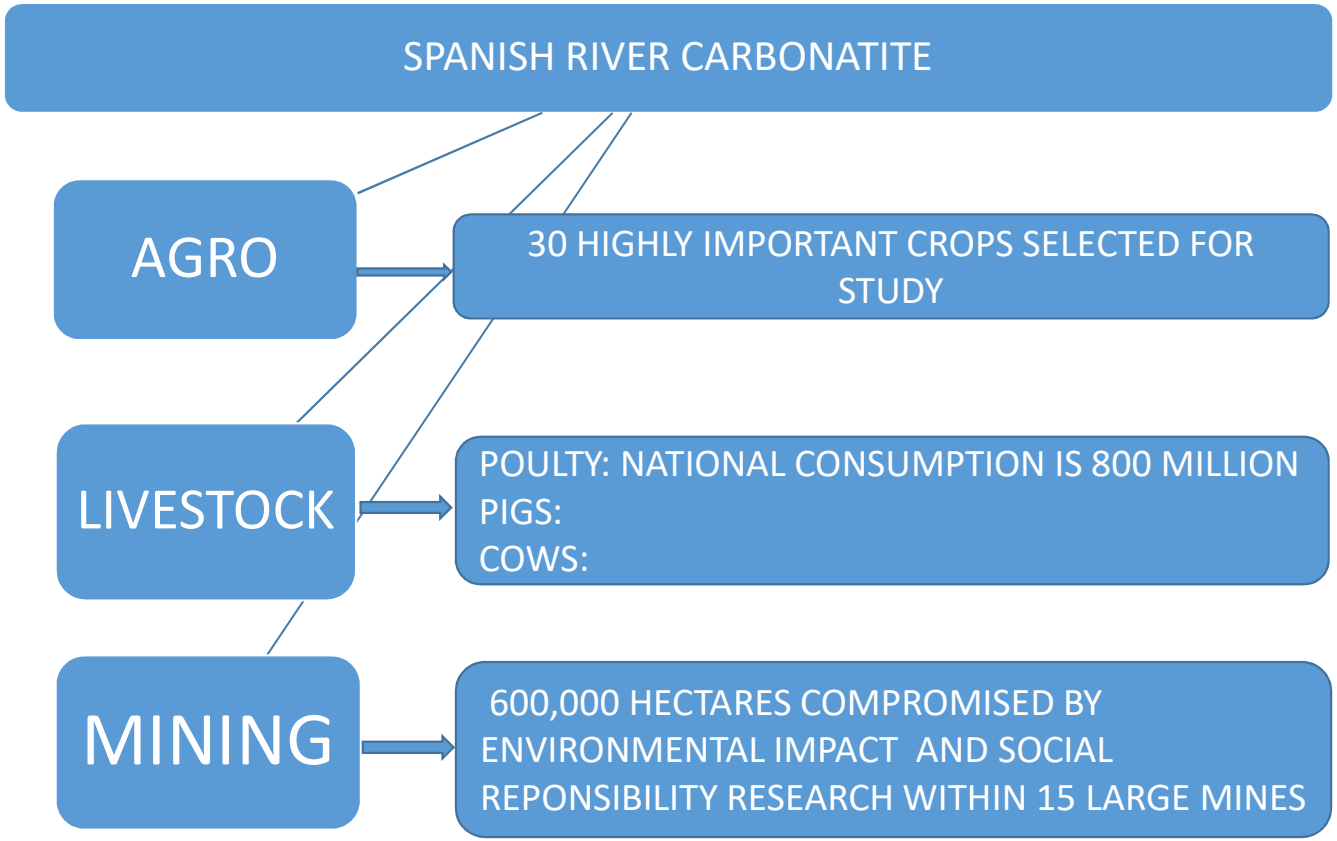
WITH THE IMPACT OF AN ASTEROID, ARISES FROM THE DEPTHS OF THE EARTH THE MAGMA THAT BRINGS MORE THAN 50 VALUABLE ELEMENTS TO NOURISH THE PLANTS THAT FEED US HUMANS.



THE SECTORS IN WHICH CARBONATITE IS USED



THE RESEARCH CARRIED OUT IN THE SECTORS



AGRO

TO RESEARCH AND STUDY THE EFFECTS AND BENEFITS OF CARBONATITE IN AGRO, INITIALLY IN PERU, 30 CROPS OF HIGHEST PROUDCTION HAVE BEEN SELECTED IN WHICH FIELD TESTS ARE BEING PERFORMED; INCA INCHI, NATIVE POTATOES, QUINUA, GOLDENBERRY, TOMATOES, CORN, COFFEE, CACAO, BANANAS, PAPAYAS, MANGO, PINEAPPLE, ASPARAGUS, CAPSICUM, RICE, SUGAR CANE, CITRUS FRUITS, GRANADA, GRENADINE, ONION, LETTUCE, OLIVES, GRAPES, PAPRIKA, FLOWERS, MUSHROOMS, TUNA FRUIT, AND STRAWBERRIES.

NATIVE CROPS















THE LARGEST CROPS FOR EXPORT












THE FIRST EXPERIENCE IN CROPS WITH SRC CARBONATITE FERTILIZER IN PERU WAS CARRIED OUT WITH INCA INCHI CROP WHICH ACHIEVED SIGNIFICANT RESULTS IN TERMS OF PRODUCTION YIELD AND QUALITY OF FRUITS.

INCA INCHI

It’s the most nutritional and healthy oil-based product in the world, with 65% high quality protein, exceeding all known foods.

Inca Inchi oil is the most highly unsaturated oil with 93% of Omegas 3, 6 AND 9.

Rich in antioxidants, high in digestibility, high biodisponibility and without toxic elements.

Nutritious, healthy and enhanced flavour

FROM THE SEED OF INCA INCHI COMES THE WORLD'S BEST VEGETABLE SOURCE OF OMEGA 3 OIL, WITH THE GREATEST CONTENT OF UNSATURATED FAT (93%) AND THE HIGHEST CONTENT OF ANTIOXIDANTS, WITHOUT TOXIC COMPONENTS

OIL CONTENT AND PRINCIPAL PROTEINS AND OILSEEDS

NUTRIENTS	CROP OILSEEDS											
	INCA INCHI	LINEN	CHIA	BASIL	HEMP	OLIVE	SOY	CORN	PEANUT	SUNFLOWER	COTTON	PALM
PROTEIN	33	23.46	23	17.7	25	1.6	28	9.4	23	24	32	16
TOTAL OIL	44-54	38-50	33	30-40	30-40	22	19	5.7	45	48	16	51
PALMITIC Saturated	3.85	5	7.29	5.95	7	13	10.7	11	12	7.5	18	45
STEARIC Saturated	2.54	3.40	3.84	1.85	3	3	3.3	2	2.2	5.3	3	4
TOTAL SATURATED	6	8.40	11.13	7.80	10	16	14	13	14	13	21	49
OIL Omega $_9$	8.28	19	6.5	13	12	71	22.3	28	43.3	29.3	18.7	40
LINOLEIC Omega $_6$	36.8	15	19	14	55	10	54.5	58	36.8	57.9	57.5	10
LINOLEIC Omega $_3$	60	57	60	65	20	1	8.3	1	0	0	0.5	0
ESSENTIAL FATTY ACIDS:	84.86	72	79	79	75	11	62.8	59	36	57.9	58	10
TOTAL UNSATURATED:	93.6	91	90.13	92	85	83	85.1	87	80.1	87.72	76.7	50

Fuente: JOSE ANAYA YABAR - AGROINDUSTRIAS AMAZÓNICAS, 2001 (VALORES PROXIMALES)

UNA VEZ EXTRAÍDO GRAN PARTE DEL ACEITE DE LA SEMILLA, SE OBTIENE LA HARINA INCA INCHI VIRGEN, CON LA MAYOR CONCENTRACIÓN DE PROTEÍNA: 65%, CON LA MEJOR CALIDAD NUTRICIONAL FRENTE A OTRAS FUENTES DE PROTEINA, POR SU COMPOSICIÓN COMPLETA Y BIEN BALANCEADA EN AMINOÁCIDOS ESENCIALES Y NO ESENCIALES, QUE LE DAN LA MAS ALTA DIGESTIBILIDAD Y BIODISPONIBILIDAD

COMPARATIVO DEL COTENIDO DE PROTEINA DE LA HARINA INCA INCHI										
INCA INCHI	BACUNO	POLLO	OVEJA	CERDO	PESCADO	SOYA HARINA	MAIZ GRANO	ARROS GRANO	TRIGO GRANO	QUINUA GRANO
65	**19**	**23**	**18**	**17**	**20**	**42**	**9.4**	**14**	**14**	**14**

THE PLANT IS A VINE AND REQUIRES SUPPORT

Inca Inchi with conventional NPK fertilizer

Inca Inchi with carbonatite (SRC) added

SRC carbonatite intensifies the production of chlorophyll favouring its nutritive functions, it's development and production of fruit

THE INCA INCHI FLOWER USUALLY HAS A SINGLE FEMALE FLOWER AND MORE THAN 200 MALE FLOWERS IN EVERY KNOT OF THE BRANCH

THE FLOWERING IN EVERY KNOT OF THE BRANCH HAS ONLY A SINGLE FEMALE FLOWER

WITHOUT INDUCTION
WITHOUT CARBONATITE
ONLY A SINGLE FEMALE FLOWER

<u>WITH</u> FLOWER INDUCTION AND CARBONATITE (SRC), FEMALE FLOWERS DOMINATE WHEN THE PLANT FLOWERS

WITH INDUCTION AND CARBONATITE, THE FLOWERING IN EVERY KNOT OF THE BRANCH IS MOSTLY FEMALE

INCA INCHI FRUITS ARE PRODUCED ONLY FROM FEMALE FLOWERS AND GENERALLY PRODUCE ONE FRUIT FOR EACH FLOWERING

FLORAL INDUCTION WITH CARBONATITE INCREASES PRODUCTION BY MORE THAN DOUBLE (> 100%)

SEED PRODUCTION PER HECTARE, PER YEAR IN FARMER'S CROPS IS 2 – 3 TONNES. WITH CARBONATITE (SRC) AND FLORAL INDUCTION, 7 TONNES PER HECTARE HAS BEEN ACHIEVED. TO ACHIEVE THIS, 1 KG PER PLANT, FOR 1,000 PLANTS PER HECTARE WAS APPLIED (1 TONNE SRC/HA).

OUR OBJECTIVE IS TO SURPASS 10 TONNES PER HECTARE, AN OBJECTIVE THAT WE ARE SURE TO ACHIEVE WITH THE MOST ADVANCED TECHNOLOGY AND USE OF CARBONATITE.

CULTIVO INCA INCHI
CON ALTA PRODUCCION
DE SEMILLA POR
INDUCCION FLORAL
Y FERTILIZANTE
CARBONATITA

INCA INCHI PRODUCTS

RECONOCIMIENTOS INTERNACIONALES AL ACEITE INCA INCHI

PARIS, MEDALLA DE ORO 2004

PARIS MEDALLA DE ORO 2006

BRUXELAS AWARDS

RECONOCIMIENTOS EN PERU

CAMARA DE COMERCIO DE SAN MARTIN

Cámara de Comercio y Producción de San Martín

PERUCÁMARAS

El Presidente del Consejo Directivo de la Cámara de Comercio y Producción de San Martín - Tarapoto.

Por el presente hace un reconocimiento a:

AGROINDUSTRIAS AMAZONICAS S.A

En mérito a su destacada distinción con la Medalla de Oro en el Salón de Comida Etnica Mundial, celebrado en París el 14 de junio de 2006, por la producción de Aceite de Sacha inchi.

Tarapoto, Julio de 2006

Walter John Arevalo Alvarado
Presidente - CCPSM

MINISTERIO DE AGRICULTURA

MINISTERIO DE AGRICULTURA

Reconocimiento

La Dirección Regional Agraria San Martín

Expresa su reconocimiento a la Empresa Agroindustrias Amazónicas, por haber logrado en el concurso mundial de los aceites del mundo el Primer Puesto y la medalla de oro del concurso para el Sacha Inchi - Inca Inchi, planta nativa de la Amazonia Peruana, e impulsar el Proyecto Omega que generará el desarrollo Agroindustrial de la Región y de la Amazonia.

Tarapoto, Julio del 2004

MINITERIO DE RELACIONES EXTERIORES


INCA INCHI CULTIVATION

3. Peruvian Agricultural Magazine Article re: SRC

Boreal received exposure in a national agriculture magazine in Peru as shown below

Logra aumentar la producción (orgánica o convencional) entre 20% y 30%

LA CARBONATITA, REPARA SUELOS Y NUTRE PLANTAS

Se trata de un fertilizante de origen volcánico, procedente de Canadá, que contiene 50 elementos, entre ellos calcio, fósforo, potasio, magnesio, además de macros y micros minerales, nutrientes, tierras raras y arcillas reactivas, que mejoran todo tipo de suelos con problemas de contaminación, alta acidez, erosión o salinos, y aumentan la producción entre 20 y 30 %. Aquí la versión del importador autorizado, Sr. José Anaya Yábar, Gerente General de Agroboreal SAC.

APLICACIÓN: *En general, para una hectárea por campaña de cultivos se requiere una tonelada de Carbonatita.*

— En principio, ¿qué es y para qué sirve la Carbonatita, Sr. José Anaya?

— Es un producto extraído de una cantera natural de Canadá **(Spanish River Carbonatite, Carbonatita del río Español)**, que no ha sido refinado ni alterado; contiene el conjunto más extenso de oligoelementos que cualquier otro fertilizante orgánico o químico, en total **50 entre macro y micro elementos**. Entre ellos una gran variedad de minerales y nutrientes de alta calidad: **calcio, fósforo, potasio, magnesio.** Muchos son catalizadores críticos en las interacciones mineral/microbiana/vegetal y eso explica, en parte, la excelente respuesta de la Carbonatita sobre una amplia y compleja variedad de suelos y condiciones de crecimiento. En síntesis, este producto es un **fertilizante mejorador de suelos.**

IMPORTADOR AUTORIZADO: *Sr. José Anaya Yábar, Gerente de Agroboreal SAC, participa en la investigación, desarrollo y comercialización de varios productos estratégicos andinos y amazónicos, en los sectores agrario, alimentos, salud natural, ecología. Consultor internacional en Américas del Sur, Europa y Asia.*

FERTILIZANTE NATURAL: *Aumenta el contenido nutricional de los cultivos, mejora su calidad y repara los suelos degradados del agro y la minería.*

ES DE LENTA ABSORCIÓN

— ¿En qué se diferencia de los fertilizantes convencionales?

— La diferencia radica en su gran composición en minerales, que ayuda a aumentar el contenido nutricional de los cultivos y mejorar la calidad del suelo, en la agricultura convencional y orgánica. También contiene **tierras raras** y **arcillas reactivas**, pero no tiene metales pesados ni radioactivos. Es un fertilizante de lenta absorción. Ofrece excelentes resultados en suelos ácidos o alcalinos, pues favorece el pH.

— Puede decirse que es un excelente corrector de suelos...

— Así es. **La Carbonatita** es un excelente abono y corrector de suelos. Mejora, acondiciona y ayuda a corregir limitaciones en las propiedades físicas, químicas y biológicas de los suelos agrícolas, incluso suelos mineros, porque corrige el pH alcalino o el pH ácido, llevándolos a un suelo neutral que favorece al desarrollo y producción de las plantas. Esta "magia" se obtiene por la combinación de elementos del producto, los suelos del cultivo y el nitrógeno.

— ¿En cuánto tiempo, después de la aplicación en los suelos, se puede notar los resultados?

— Normalmente otras tecnologías o composiciones tardan entre 5 y 8 años en "regenerar" un suelo y a costos muy altos, pero aplicando la Carbonatita, en las cantidades adecuadas y con los controles edafológicos, podría verse resultados positivos entre el tercer y cuarto año. En el caso particular de suelos de relaves mineros, la Carbonatita reduce la acidez del sustrato, característica principal de estos suelos. Así lo demostraron estudios realizados por el **Agricultural Soil Improver or Amendment** a cargo del **Dr. Benjamin Zamudio González**.

— ¿Qué empresas han certificado a la Carbonatita como fertilizante para la producción orgánica?

— Las certificadoras internacionales **Omri** (Canadá) y **Ecocert** (Francia).

AISLA METALES PESADOS

— Alguna experiencia...

— Conforme a los resultados científicos realizados en **México** a través de la **Universidad de Chapingo** y el **Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias** (INIFAP), se ha logrado confirmar que el producto logra aislar (encapsular) metales pesados, evitando que estos sean absorbidos por las plantas. Adicionalmente, existen estudios en Canadá que soportan la tesis.

— ¿Tener numerosos componentes no perjudica suelos y plantas?

— Debido a sus bajas dosis, casi exactas, los componen-

tes no son perjudiciales ni para el suelo ni para la planta, al contrario favorecen a la salud y alimentación de la planta y a la composición y mejoramiento del suelo.

ARCILLAS REACTIVAS Y TIERRAS RARAS

— ¿Qué son las arcillas reactivas y las tierras raras?

— Son elementos que si están en cantidades mínimas y en forma asimilables, influyen positivamente en la absorción de los macro y micro nutrientes del suelo, actúan como catalizadores y, en la mayoría de casos, como suplementos y desbloqueadores de los elementos del sustrato. La arcilla reactiva o de elevada actividad es un término que generalmente describe minerales con altas propiedades de intercambio de cationes. Después de la fotosíntesis, la reacción de intercambio que ocurre en el suelo es la siguiente en importancia para el establecimiento de plantas superiores. Estas propiedades físicas resultan de la acumulación de nutrientes y estructuras vegetales intercambiables y de la colonización de microorganismos esenciales de suelos. En el caso de la Carbonatita, la biotita mineral de arcilla primaria, degradada a la **vermiculita**, representa aproximadamente el 15% de su contenido. El área de la superficie de vermiculita es de **600-800 m2/g** con el CEC más alto de todas las arcillas (180 meq / 100 g). Además de estos atributos, la **vermiculita** tiene una gran diversidad de comportamientos, lo que significa que la capacidad de los espacios intercalados puede expandirse o reducirse para adaptarse a una amplia variedad de iones intercambiables; esto se conoce como "superactivo".

— ¿Y las tierras raras?

— El uso de elementos de tierras raras (REEs), como oligoelementos en la agricultura, es ampliamente practicado en la **República Popular de China** en una amplia gama de **cultivos** y la **ganadería**. Investigadores chinos han informado sobre respuestas fisiológicas y de rendimiento de más de 20 plantas cultivadas y árboles tratados con elementos de tierras raras. Las respuestas fisiológicas incluyen un **aumento en el contenido de clorofila que da como resultado un follaje verde más oscuro, mayor tasa de desarrollo, mayor producción de raíces, macollamiento más fuerte y un mejor color de la fruta en cultivos como manzanas, naranjas y sandías** (Brown et al 1990). Las respuestas de rendimiento incluyen aumento de materia seca y fresca en plantas de cultivo como trigo, del contenido de azúcar en caña de azúcar, del contenido de vitamina C en uvas y manzanas, y del contenido de grasas y proteínas en soja. Se ha observado que la actividad de ciertas enzimas vegetales, el contenido total de clorofila y la tasa fotosintética, aumentan con la aplicación de tierras raras (Brown et al 1990). También se informa que la absorción de varios macro nutrientes como nitrógeno, potasio y fósforo se ve reforzada por la aplicación de elementos de tierras raras.

SACHA INCHI: *(1) Vigorosa planta nutrida con Carbonatita. (2) Sin Carbonatita.*

— ¿Cuál es el uso de la Carbonatita en la ganadería?

— La investigación adicional sobre la alimentación de **REE** para animales rumiantes ha demostrado una **mejor fermentación ruminal y digestión de la alimentación**, lo que ha dado como resultado la aprobación de REE como **suplemento animal en diversos países europeos**. La Carbonatita es una buena fuente de elementos REE y la investigación actual de la universidad, así como ensayos agrícolas sobre una diversidad de tipos de suelo encontrados en Canadá y Estados Unidos en los últimos 20 años, tienen respuestas similares a las plantas y el ganado.

VISIONARIO: *Sr. Gonzalo Aguiar Gadea EVP, Presidente de Boreal Volcanic Minerals de México, con más de 20 años de experiencia en el desarrollo y gestión de proyectos.*

APLICACIÓN Y DOSIS

— ¿Cuál es la dosis de carbonatita sugerible, sobre la base de experiencias, por cultivos?

— De manera general, aproximadamente **una tonelada y cien kilos por hectárea por campaña de cultivo**. Esta cifra puede variar para los cultivos de alta densidad. Para optimizar la cantidad necesaria para cada cultivo, es conveniente realizar una investigación y esa labor la venimos haciendo en Perú, con proyección de optimizar la producción de cultivos alimenticios, en un primer tiempo, para **veinte cultivos**, entre ellos **cacao, café, palta, arándano, cítricos, vid, mango, granadas, sacha inchi**, entre otros.

20-30% MÁS PRODUCCIÓN

— ¿En cuánto se podrían incrementar los rendimientos de los cultivos utilizando la Carbonatita?

— Comparativamente con cultivos que estén en las mismas condiciones de área, clima, suelo, altura sobre el nivel del mar, disponibilidad de agua, según el tipo de cultivo, la **Carbonatita puede incrementar entre 20-30% la producción**, pudiendo ser aún más elevado dependiendo de condiciones del manejo del cultivo. Además, mejora la **calidad del producto por la alimentación rica en minerales que le provee a la planta.**

— Finalmente, ¿cuál es el canal de distribución?

— Por ser nuevo, con ingreso en el 2017, recién se está constituyendo la red de distribución, estando en el proceso de selección de las empresas que puedan brindar el mejor nivel de atención al cliente. **Agroboreal SAC** es representante directa de la empresa **Boreal Agrominerals de Canadá**, propietaria del yacimiento de la Carbonatita

(Enzo Alminagorta V.)

IMPACTO DE UN ASTEROIDE

Señalan los investigadores que el origen de la Carbonatita reside en un antiguo volcán extinto, ubicado en la región de Toronto, Canadá, que surgió por el impacto de un asteroide hace dos mil millones de años. La Carbonatita se encuentra en el Escudo Precámbrico a lo largo de un antiguo valle, en el que se formaron el Complejo de Carbonatita del Río Español y la cuenca de níquel de Sudbury

NOTA DE REDACCIÓN: *Contacto con el Sr. José Anaya vía correos electrónicos: www.agroboreal.com.pe, www.borealagrominerals.com y* ***info@agroboreal.com.pe***

4. Photos of Mr. Anaya at Peru Agricultural Conferences and Field Trials
A partnership between Boreal, the Peruvian Ministry of Agriculture, academia and local farmers.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Section D. Appendix A – Invoices, Expenses, Sampling Daily Logs

Expense Item	Date	Receipt/Invoice #	Payee	Description	Amount		FX used
					CDN$	US$	1.3
Sampling costs	31-Aug-17	J003861	Fisher Wavy	Cost to bag samples for Peru - 21 tonnes $36/tonne	756.00		
Sampling costs			Fisher Wavy	Cost to bag samples for Peru - 21 tonnes $36/tonne	756.00		
Sampling costs	31-Dec-16	J003612	Fisher Wavy	Cost to Dry, screen, deliver 42 tonnes - $18/tonne	756.00		
Supervision costs			Chris Caron - $80/hour	3 days x 8 x $80/hr	1920.00		
Shipping costs Sudbury to Toronto	31-Aug-17	J003909	Fisher Wavy	Transporting 1 - 20 ft container to OSTFF (Toronto)	3254.40		
Shipping costs Sudbury to Toronto	31-Oct-17	J003948	Fisher Wavy	Transporting 1 - 20 ft container to OSTFF (Toronto)	3254.40		
Shipping costs	22-Dec-17	Wire transfer #	Ocean Transportation Services	Freight costs - ship to Peru	7300.80	5616.00	
Shipping costs	22-Dec-17	640-1133536		Bills of lading	97.50	75.00	
Industrial Minerals Marketing	11-Oct-18	Wire transfer #492164	Groupo Target S.A.C.	Conference Fee- TechnoAgro 2018 Exhibition, Oct 27-27, 2018, Trujillo, Peru	3939.00	3030.00	
Industrial Minerals Marketing	29-May-18	Wire transfer #451070	Eventos y Protocolo S.A.C.	Conference Fee- Agromin 2018 Exhibition, June 6-8, 2018, Trujillo, Peru	5154.24	3964.80	
				Total Expenses Submitted	**27188.34**		

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CHRIS CARON			Daily Activity Log		09-Jan-17
Start	**End**	**Category**	**Activity**	**Activity Interval (hrs)**	**Total Daily (hrs)**
5:00:00 AM	6:00:00 AM	Travel	Chelmsford to site	1	
6:00:00 AM	7:00:00 AM	Sampling	Layout sampling area for operator	1	
7:00:00 AM	3:00:00 PM	Sampling	Supervise sample extraction and screening	8	
					10

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CHRIS CARON			Daily Activity Log	10-Jan-17	
Start	**End**	**Category**	**Activity**	**Activity Interval (hrs)**	**Total Daily (hrs)**
5:00:00 AM	6:00:00 AM	Travel	Chelmsford to site	1	
6:00:00 AM	12:00:00 PM	Sampling	Supervise sample extraction and screening	6	
12:00:00 PM	3:00:00 PM	Sampling	Supervise trucking of bulk sample to Dowling Stockpile	3	
					10

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CHRIS CARON			Daily Activity Log		25-Jan-17
Start	**End**	**Category**	**Activity**	**Activity Interval (hrs)**	**Total Daily (hrs)**
8:00:00 AM	12:00:00 PM	Sampling	Collect composite samples from stockpile for geochem	4	
12:00:00 PM	3:00:00 PM	Sampling	Prepare and submit samples to ALS for geochem	3	
					7

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CHRIS CARON			Daily Activity Log	03-Aug-17	
Start	**End**	**Category**	**Activity**	**Activity Interval (hrs)**	**Total Daily (hrs)**
8:00:00 AM	1:00:00 PM	Sampling	Supervise bagging of bulk sample for Ocean transport	5	
1:00:00 PM	4:00:00 PM	Admin		3	
					8