

# Carbon from Archer Exploration Limited's Graphite Deposit Boosts Plant Growth

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Adelaide, Australia (ABN Newswire) - [Archer Exploration Ltd.](#) (ASX:AXE) is pleased to announce that testing by the University of Adelaide has shown that plant growth is significantly boosted when raw graphite from Archer's Sugarloaf deposit is used as a soil conditioner.

## Highlights

- Results from 30-day University of Adelaide wheat trials show that plant growth is significantly enhanced by the addition of raw unprocessed graphite from Archer's Sugarloaf deposit in SA
- Graphite from the Sugarloaf deposit on Eyre Peninsula:
  - \* Can be used as a natural nutrient soil conditioner
  - \* Improves water retention of the soil
  - \* Contains and releases a range of macro and micro nutrients essential to plant growth
- Macro and micro nutrients are present in both soluble and slow release forms
- No processing of the Sugarloaf graphite resource is required
- These results enhance the prospects of a second graphite project in addition to the high purity, battery grade graphite found at Archer's neighbouring Campoona, Central Campoona and Lacroma deposits.

Archer's Managing Director, Mr Gerard Anderson, said "The latest test results from our Sugarloaf deposit support the previous findings and the possible development of the large deposit as a low cost, but potentially high value agricultural product. "This has the potential to be a second commercially viable graphite project in addition to our high quality, battery grade graphite that we have found at the Company's neighbouring Campoona, Campoona Central and Lacroma projects," Mr Anderson said.

"Tests to date are showing that the manufacture of a saleable Sugarloaf product should be fairly simple, involving mining, crushing and bagging. No further processing is required," he said.

"Fertiliser prices in Australia have been steadily increasing due to rising demand and a falling Australia dollar which makes this an attractive market for us to participate in. With South Australia's rich agricultural heritage we see the development a new locally manufactured fertiliser business being well received by the State's croppers and graziers," said Mr Anderson.

Sugarloaf carbon is not typically crystalline graphite; it is unique because of its broad composition of carbon, silica, and soluble macro and micro nutrients. Previous testing showed the Sugarloaf deposit contains 11 out of 13 elements required as nutrients for plant growth.

The University's latest plant trials were undertaken to test whether the unique properties of the Sugarloaf carbon made it potentially suitable as a soil conditioner/fertilizer.

Archer's Sugarloaf graphite deposit is located next to Archer's proposed graphite processing plant on South Australia's central Eyre Peninsula. Previous drilling has supported an Exploration Target of 40 - 70 million tonnes at a grade of 10 -12% TC. However, whilst the Exploration Target is large, the potential quantities and grades presented in the Exploration Target are conceptual in nature, there has been insufficient exploration to define an overall Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

## Test results

Visual observation of preliminary results (Figure 1, see link below) show that soil spiked with Sugarloaf

carbon significantly increases shoot and root length of the wheat and the thickness of the wheat stalks are appreciably thicker after 7 days.

Other test work by the University of Adelaide also showed that raw Sugarloaf graphite reduces soil water loss due to evaporation (Table 1, see link below). This means the Sugarloaf graphite is able to improve soil wettability.

### **Test methodology**

The University of Adelaide conducted a series of tests using raw Sugarloaf graphite, including plant trials. Soil used in the plant trials was sourced from Archer's wholly owned farm on which Sugarloaf is located. Three grains of wheat were placed into small pots, each containing 120g of Sugarloaf soil and varying amounts of Sugarloaf graphite (7.5, 15 and 30g). The control pot had no Sugarloaf graphite.

For the plant trials, 3 grains of wheat were placed into each pot. The soil (120g) was spiked with different amounts of Sugarloaf carbon (7.5, 15 and 30g). The soil content (80 g) was fixed at a relative humidity of 20 % and incubated at a temperature of 25deg C. The soil was watered everyday with distilled (DI) water and the release of nutrients in the soil was measured at certain time intervals (7, 14, 21 and 28 days) for a period of 1 month.

Monitoring of soil and plant studies is in progress and will include measuring soil pH before and after planting, measuring wheat shoot and root lengths and acid digestion of shoots and roots to determine nutrient up-take to the plants.

To examine the loss of water in the different spiked soil with Sugarloaf carbon the soil conditioning experiments were repeated but left un-watered for 3 days.

Sugarloaf is a very large mineral occurrence. Whilst the carbon has proven difficult to extract as a commercial graphite concentrate, it has proven to be very effective as a soil conditioning agent and a slow release fertilizer that also increases soil wettability and plant growth.

Many of Australia's soils are ancient skeletal soils which have been heavily leached of the nutrients needed by plants to support vigorous plant growth. Productive farming ventures rely heavily on the application of high-cost fertilizers in order to achieve commercial cropping operations. Much of the fertilizer applied by farmers can be lost due to adverse weather (especially in heavy rainstorm events) and fertilizer has to be applied each year as little to none is retained in the soil.

Whilst additional research is needed, Sugarloaf has the potential to provide a stable, natural and long-life product that will be retained in the soil to build up soil condition and improve water retention.

Further results of the plant and soil trials and results from additional test work will be released over the coming weeks.

To view the release including tables and figures, please visit:  
<http://media.abnnewswire.net/media/en/docs/ASX-AXE-876996.pdf>

### **About Archer Exploration Limited:**

[Archer Exploration Ltd.](#) (ASX:AXE) is an Australian Stock Exchange listed company with 100% ownership of 15 tenements and one Exploration Licence Application all in South Australia covering 6,053 km<sup>2</sup>.

Archer also has the rights to all minerals other than uranium on EL4693 covering a further 816 km<sup>2</sup>. Archer's main project is the Campoona Graphite Project which is located within reach of established and major developing infrastructure. It has a JORC 2004 Resource of 5.27 million tonnes @ 7.6 % TC (based on 2% TC cut-off).

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