



## HARVEST MINERALS

5 September 2017

**Harvest Minerals Limited**  
**(“Harvest” or the “Company”)**

**Excellent Coffee Agronomic Test Results from the Arapua Fertiliser Project**

Harvest Minerals Limited, the AIM quoted fertiliser development company, is pleased to announce further positive results from the ongoing agronomic test work conducted on KPfétil, its direct application natural fertiliser and remineraliser product produced from the Company's 100% owned Arapua Fertiliser Project in Brazil (“Arapua”).

**Highlights**

- Results of tests conducted over 180 days on juvenile ( $\pm 1.5$  year) and mature (+12 year) coffee plants indicate that KPfétil, a completely natural, slow release, single product fertiliser, is as effective as traditional fertilisers in supplying potassium (“K”) and phosphate (“P”) to plants
- As part of the test, a total of 12 treatments were applied to compare KPfétil to conventional fertilisers as a source of K and P
- Results are part of the ongoing agronomic efficiency study on the application of KPfétil on coffee crops
- Further tests will be conducted to examine the long-term benefits of using KPfétil over conventional fertilisers

Santinato & Santinato Cafés Ltda (‘Santinato’), a renowned agronomic consulting company in Brazil specialising in coffee cultivation, conducted the tests at one of the Veloso Agropecuária (‘Veloso’) coffee plantations. Veloso is considered one of the largest coffee producers in the Brazilian Cerrado.

**Harvest’s Executive Chairman, Brian McMaster, said,** *“These results are excellent and build on the successful tests carried out on rice crops which demonstrated a substantial increase in dry matter production following the application of KPfétil. We have identified the coffee growers in the Cerrado Region as an important customer base and tests results indicating that our local, 100% organic product acts as efficiently as imported KCl, a conventional source of potassium, represent a significant outcome for Harvest. We expect further results from these tests over the coming months, but our focus is now on registering KPfétil with the Ministry of Agriculture, Livestock and Supply (‘MAPA’) and achieving our first sales. Supported by the test results we have received to date we have been introducing KPfétil to potential end-users and distributors.”*

**Further Information - Agronomic Efficiency Study in Coffee Crops**

The purpose of the study is to compare the effects of applying KPfétil against conventional fertilisers as a source of K and P in both juvenile ( $\pm 1.5$  years old) and mature (+12 years old) coffee plants. A total of



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twelve treatments were applied to both the juvenile and mature coffee plants, being six for potassium (table 1) and six for phosphate (table 2).

*Table 1 – Potassium Treatments Applied and dosages*

Treatment	Source	Juvenile Coffee	Mature Coffee
		Dose	Dose
		K <sub>2</sub> O (kg/ha)	K <sub>2</sub> O (kg/ha)
1	Control (without K)	0	0
2	KCl (conventional source of K)	200	500
3	KPfertil (powder)	200	500
4	KPfertil (powder)	300	750
5	KPfertil (powder) + 5 t/ha coffee straw	200	500
6	KCl + 5 t/ha coffee straw	200	500

*Table 2 – Phosphate Treatments Applied and Dosages.*

Treatment	Source	Juvenile Coffee	Mature Coffee
		Dose	Dose
		P <sub>2</sub> O <sub>5</sub> (kg/ha)	P <sub>2</sub> O <sub>5</sub> (kg/ha)
1	Control (without P)	0	0
2	Triple Superphosphate (TSP, a conventional source of P)	80	150
3	KPfertil (powder)	80	150
4	KPfertil (powder)	120	225
5	KPfertil (powder) + 5 t/ha coffee straw	80	150
6	TSP + 5 t/ha coffee straw	80	150

After the treatments had been applied for 180 days, the coffee plants were harvested and submitted for biometric evaluation, which is one of the main indicators of agronomic efficiency. At this first stage the biometric measurements used were the offshoot length, the number of nodes and the internode length.



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*Figure 1: Treatment of KPfertil and coffee straw applied to juvenile coffee plants*

## Results

The detailed results of the test are contained in Tables 3 through 6 below.

These tests were conducted over a relatively short time frame of 180 days. However, even over this short time frame, it was demonstrated that there was no statistical difference in the biometric parameters between KPfertil and KCl at the 100% dose for both juvenile and mature coffee plants.

**Table 3 – Biometric measurements for K from Juvenile Coffee Crops after 180 days trial.**

Treatment	Source	Offshoot Length	Number of Nodes	Internode Length
1	Control (without K)	22,35 b	6,67 b	23,07 b
2	KCl (conventional source of K)	24,54 a	7,49 a	26,88 a
3	KPfertil (powder)	24,26 a	7,58 a	26,27 a
4	KPfertil (powder)	23,76 ab	7,52 a	25,75 ab
5	KPfertil (powder) + 5 t/ha coffee straw	24,03 a	7,48 a	24,47 ab
6	KCl + 5 t/ha coffee straw	23,73 ab	7,51 a	25,52 ab

\*The letters in each column signify which values (Means) are the same when using the Tukey test at 5% probability.



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**Table 4 – Biometric measurements for K from Mature Coffee Crops after 180 days trial.**

Treatment	Source	Offshoot Length	Number of Nodes	Internode Length
1	Control (without K)	13,57 a	4,44 ab	32,54 a
2	KCl (conventional source of K)	14,46 a	4,75 ab	35,63 a
3	KPfertil (powder)	12,93 a	4,3 b	34,3 a
4	KPfertil (powder)	13,55 a	4,53 ab	35,48 a
5	KPfertil (powder) + 5 t/ha coffee straw	14,62 a	4,84 a	35,22 a
6	KCl + 5 t/ha coffee straw	14,47 a	4,58 ab	38,3 a

\*The letters in each column signify which values (Means) are the same when using the Tukey test at 5% probability.

**Table 5 – Biometric measurements for P from Juvenile Coffee Crops after 180 days trial.**

Treatment	Source	Offshoot Length	Number of Nodes	Internode Length
1	Control (without P)	23,3 a	7,48 a	24,33 a
2	TSP (conventional source of P)	24,13 a	7,93 a	24,28 a
3	KPfertil (powder)	24,03 a	7,86 a	24,99 a
4	KPfertil (powder)	23,53 a	7,8 a	24,98 a
5	KPfertil (powder) + 5 t/ha coffee straw	23,17 a	7,74 a	24,89 a
6	TSP + 5 t/ha coffee straw	24,34 a	7,84 a	25,37 a

\*The letters in each column signify which values (Means) are the same when using the Tukey test at 5% probability.

**Table 6 – Biometric measurements for P from Mature Coffee Crops after 180 days trial.**

Treatment	Source	Offshoot Length	Number of Nodes	Internode Length
1	Control (without P)	15,97 ab	5,15 a	30,28 ab
2	TSP (conventional source of P)	15,03 b	5,0 a	28,15 b
3	KPfertil (powder)	15,65 ab	5,06 a	28,78 ab
4	KPfertil (powder)	17,6 a	5,44 a	32,42 ab
5	KPfertil (powder) + 5 t/ha coffee straw	16,82 ab	5,34 a	32,69 a
6	TSP + 5 t/ha coffee straw	17,62 a	5,47 a	31,23 ab

\*The letters in each column signify which values (Means) are the same when using the Tukey test at 5% probability.

This announcement contains inside information for the purposes of Article 7 of EU Regulation 596/2014.

**\*ENDS\***

**For further information please visit [www.harvestminerals.net](http://www.harvestminerals.net) or contact:**



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### Notes:

Harvest Minerals (HMI.L) is a Brazilian focused fertiliser Company targeting low cost, near term development projects. The Company's primary focus is the development of its 100% owned Arapua Fertiliser Project from which it produces its KPFétil product, a proven, multi-nutrient, slow release, organic fertiliser and remineraliser, which is produced from a weathered potassium and phosphate rich lava and offers many economic and agronomic benefits. Covering 14,946 hectares and located in the heart of the Brazilian agriculture belt in Minas Gerais, Arapua is a shallow, low cost mine with an indicated and inferred resource of 13.07Mt at 3.1% K<sub>2</sub>O and 2.49% P<sub>2</sub>O<sub>5</sub>. This resource translates into a mine life of over 100 years at a rate of 450k tonnes per annum and crucially is based on drilling just 6.7% of the known mineralisation, leaving significant upside potential. With a trial mining licence in place allowing Harvest to extract 50kt of product on a rolling basis, whilst the full mining licence application process is underway, and official registration of KPFétil as a remineraliser expected by the end of 2017, Harvest is ideally placed to address the significant demand for locally produced fertiliser in Brazil; Brazil has abundant agricultural land but lacks domestic fertiliser, with the country currently importing 90% of the potash it uses. Furthermore, the Brazilian government has set a target to be self-sufficient in fertilisers by 2020, creating significant market opportunity for Harvest and its KPFétil product.

The Company has four assets at various stages of development and continues to explore other opportunities that fit its investment criteria.