POLY4

An Anglo American PLC Product

K_2O 14% | S 19% | MgO 6% | CaO 17%

Coffee

response to Anglo American's POLY4

Trial focus

Evaluate the yield response of Colombian coffee to standard NPK practice and POLY4 programme.

Overview

- Coffee crops demand a large supply of nutrients. Usually, 200 kg of potassium (K_2O) is applied per hectare – more than two times soybean requirement.
- Magnesium (Mg) deficiency is common in the main coffee producing areas, which demands the use of Mg sources. Currently kieserite is added to meet the crop's Mg demand.
- Gypsum is also applied where soil aluminium levels are high.
- High levels of chloride in currently used fertilizer sources negatively affect the size and density of coffee fruit.

Crop:
Coffee

Year:
2016 - 2020

Location:
Trial ran 3 years in Cauca, and 4 years in Caldas, Colombia

Data source:
Trials conducted by third-party, independent researcher

3.3
bags/ha

Low-chloride POLY4 programme yield advantage over standard NPK

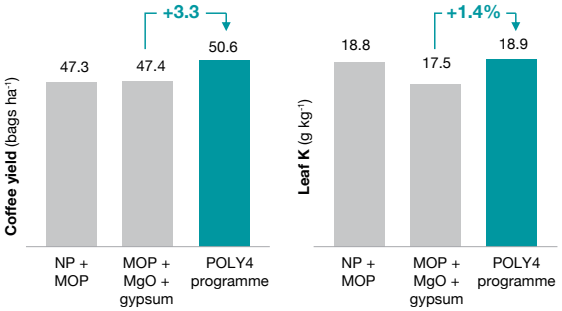
Treatments applied

- All treatments received N and P applications at recommended rates.
- P was supplied from DAP; N was supplied from urea, DAP, and for some treatments CAN.
- Trial in Caldas received 240 kg N ha^{-1}, Cauca trial received 280 kg N ha^{-1}. Both received 42 kg P_2O_5 ha^{-1}. MOP + MgO + gypsum treatments were also balanced for Ca with 24 kg CAN ha^{-1}. POLY4 application rate was 663 kg POLY4 ha^{-1}.
- All fertiliser applications were evenly split twice per year during rainfall season onto the soil. Standard practice received 230 kg ha^{-1} K_2O from MOP.

Average nutrients applied (kg ha^{-1})

	K_2O	S	MgO	CaO
NP + MOP	260	0	0	0
NP+MOP+MgO+gypsum	260	80	40	113
POLY4 programme	260	126	40	113

Results



Conclusion

- The results demonstrate that POLY4 offers the benefits of a balanced, season-long crop nutrition helping to increase yield potential.
- Across the seven harvests, the POLY4 programme increased coffee yield over standard NPK practices outperforming it by 198 kg ha^{-1}.
- In addition, POLY4 improved leaf K by 1.4% helping to meet the crop's large demand for K.
- POLY4 also helps to achieve higher quality of coffee by providing low-chloride potassium as well as balanced nutrition of soluble magnesium, sulphur and calcium.

Notes: Trials run at two sites: in Cauca for three years and in Caldas for four years, Colombia. All calculated yield results are median. A standard bag of coffee is 60 kg/ha.