# Added value POLY4 IN SOIL



## **KEY FINDINGS**

Enhanced soil nutrient availability

Improved interaction with soil environments to mobilise nutrients

70% higher release of potassium over MOP

### POLY4 BENEFITS



Source of essential nutrients



Sustained dissolution rate



Manufactured by using an environmentally considerate production process



Supportive of soil health



Suitable for organic farming

## A CASE FOR POLY4

- A fundamental characteristic of fertilisers is to ensure nutrients enter the soil and become available to crop roots.
- Soil environments are complex with physical and chemical processes regulating the availability and movement of nutrients.
- POLY4's calcium, magnesium and potassium encourage cation exchange to unlock soil nutrients thus improving nutrient availability to crops.

Fertilizer	Nutrients applied (mg kg⁻¹)			
	К	S	Mg	Са
MOP	46.3	0	0	0
POLY4 (granulated)	46.3	76	14.4	47.5

#### **GREATER SOIL NUTRIENT AVAILABILITY**



The enhanced nutrient movement through the soil profile offers roots greater opportunity to access these nutrients. POLY4 supplied potassium, sulphur, magnesium and calcium to crops at depth while also helping to unlock nutrients already available within the soil.



#### **HIGHER NUTRIENT RELEASE**



Adding calcium can promote nutrient availability due to its interaction with the cation exchange system of the soil, thereby bringing nutrients into the soil solution to help boost crop growth. This is achieved by calcium displacing potassium from soil surfaces. In this trial, POLY4 released up to 70% more potassium through the soil compared to MOP.



Notes: Equivalent rainfall based on total of 4500 mm water leached representing six years of average UK rainfall. All potassium fertilizers received 46.3 mg K g dry soil<sup>-1</sup>. Initial soil analysis: sandy loam, pH 5.6 (CaCl<sub>2</sub>), organic matter 11.8%, total N 0.31%, 3.6 mg PO<sub>4</sub>-P kg<sup>-1</sup>, 171 mg K kg<sup>-1</sup>, 3846 mg Ca kg<sup>-1</sup>, 188 mg Mg kg<sup>-1</sup>, EC 1708 (CaCl<sub>2</sub>).



#### **TRIAL FOCUS**

Compare the nutrient movement through a soil profile of POLY4 to MOP.

#### **TRIAL METHOD**

Soil was mixed with either MOP or POLY4 using a field equivalent rate of 79 kg K ha<sup>-1</sup>. A total of 19.7 L<sup>-1</sup> was passed through each column to simulate six years of UK rainfall. Water was collected and analysed for nutrients over time.

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