Growing CEREALS IN EUROPE

POLY4
A SIRIUS MINERALS PRODUCT

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

KEY FINDINGS

Adding MOP + POLY4 into the fertilizer programme consistently improved barley and wheat yields compared to standard practice (MOP + AS)

A CASE FOR POLY4

- The EU produced 143 million metric tonnes of wheat and 59 million metric tonnes of barley in 2017.
- Standard practice in Europe is to apply MOP as the K fertilizer and add ammonium sulphate-S (AS) where S fertilizer is required.
- Low-chloride and sustainable POLY4 supplies K, S, Mg and Ca in one product.

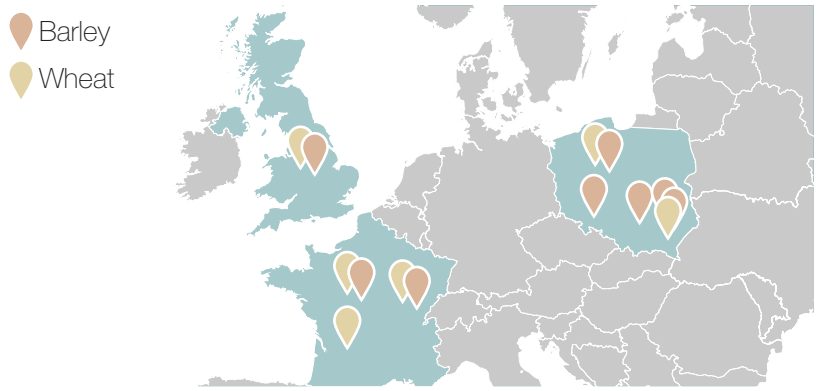
POLY4 BENEFITS

- Source of macro and micro nutrients
- Sustained nutrient availability
- Granules blend, store and spread well
- Suitable for organic farming
- Low carbon footprint

poly4.com

Treatments	Nutrients applied					
	N	P	K	S	Ca	Mg
N + P (control)	Yes	Yes	No	No	No	No
MOP	Yes	Yes	Yes	No	No	No
MOP + AS	Yes	Yes	Yes	Yes	No	No
MOP + POLY4*	Yes	Yes	Yes	Yes	Yes	Yes

*15-30% of K in the MOP + POLY4 treatment supplied by POLY4, the remainder by MOP.



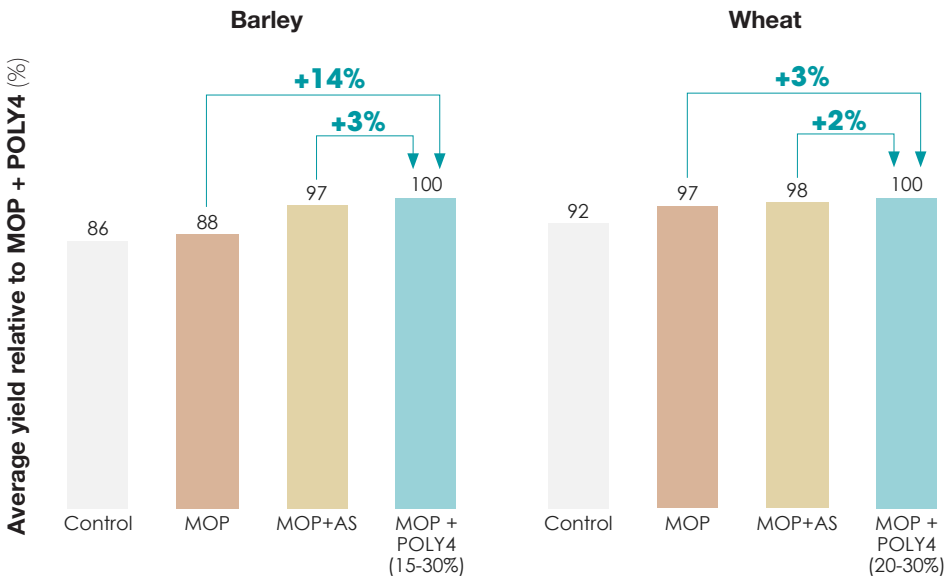
CONSISTENT YIELD IMPROVEMENT

Across 16 wheat and barley trials MOP + POLY4 had significantly higher yield than MOP + AS.

Yields with MOP + POLY4 were consistently higher than MOP + AS, with nine of the trials outperforming MOP + AS by at least 1%, and six of these by at least 3%. In the remaining trials MOP + POLY4 had similar performance to MOP + AS.

The average increase in barley yield with MOP + POLY4 was 3% compared to MOP + AS and 14% compared to MOP.

The average increase in wheat yield with MOP + POLY4 was 2% compared to MOP + AS and 3% compared to MOP.



Notes: Europe production statistics from ec.europa.eu/; Trials were conducted at 23 sites across Europe. Sixteen of the sites (eight barley and eight wheat) were responsive ($P < 0.1$) to K and/or S fertilizer (only these data are presented); Paired samples t-test of MOP + POLY4 versus MOP + S testing the null hypothesis that the mean yield of MOP + POLY4 minus MOP + S is equal to zero; significance tested at 5% level; for each trial, yield responses of fertilizers were calculated relative to the yield of MOP + POLY4, i.e. MOP + POLY4= 100%; the average yield of barley fertilized with MOP + POLY4 was 6.85 t ha^{-1} and the average yield of wheat was 6.91 t ha^{-1}; Median (and min-max) soil tests- pH 6.1 (5.2-6.8); P (six sites only): 20 (7-38) mg kg^{-1}; K: 104 (33-215) mg kg^{-1}; Ca:1115 (583-1570) mg kg^{-1}; Mg: 59 (25-94) mg kg^{-1}.

Sources: Antedis: 17000-ASA-17011-16, 17000-ASA-17012-17; Institute of Soil Science & Plant Cultivation: 49000-PUL-49010-16, 49000-PUL-49011-17; Oxford Agricultural Trials: 57000-HUT-57010-16; Warwick Crop Centre: 8000-WCC-8016-16.

TRIAL FOCUS

To compare MOP + POLY4 to standard fertilizer alternatives in European wheat and barley across 16 trials.

PARTNER

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LOCATION

France, Poland, United Kingdom

DATE

2017 – 2018

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