Growing CORN IN USA

POLY4

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

KEY FINDINGS

400 kg ha^{-1} yield advantage over MOP on average

Improved yield across two seasons

Greater crop biomass during growing season

A CASE FOR POLY4

- Illinois planted 4.2 million hectares (10.5 million acres) of corn in 2019, producing 46 million metric tonnes of grain.
- The fertile soils of Illinois are nutrient rich with a high organic matter content. The standard local recommendation based on the soil analysis was to apply only N and K to corn with the assumption that other secondary nutrients were already available in soil. However, N + K recommended practice improved yield over the N treatment in one year only.
- POLY4 ensured that the secondary nutrients required by the crop were available and improved yield in both years.

POLY4 BENEFITS

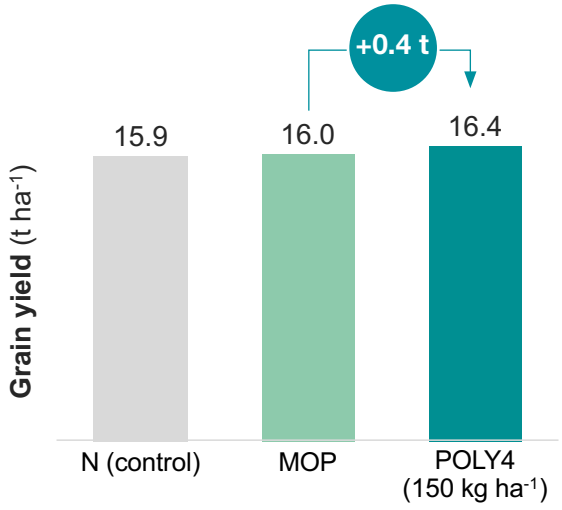
- A balanced source of K, sulphate S, Mg and Ca
- Sustained nutrient delivery
- Manufactured by using an environmentally considerate production process
- Blends, stores and spreads with standard farm equipment
- Environmentally friendly with low carbon footprint

Treatments	Nutrient application rates (kg ha^{-1})			
	K_2O	S	MgO	CaO
N (control)	0	0	0	0
MOP	84	0	0	0
POLY4 (150 kg ha^{-1})	84	29	9	26

*All treatments received 200 kg N ha^{-1} from UAN. The POLY4 treatment was balanced for K with 105 kg MOP ha^{-1}.

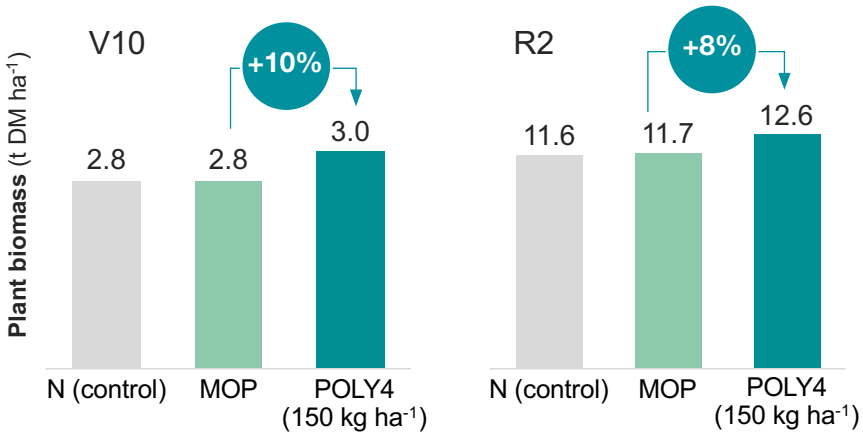
GRATER YIELD ADVANTAGE

In addition to potassium, POLY4 supplies in one product sulphate S, Mg and Ca offering a balanced crop nutrition. POLY4-fertilised corn had better yield over N in both years, while MOP only increased yield in one of the two years. On average, across the two years, POLY4 delivered 400 kg ha^{-1} greater yield over MOP.



IMPROVED CROP GROWTH

Crop biomass can increase crop yield as larger plants can capture more light for photosynthesis and sustain better grain fill. In this trial, crop biomass was measured twice: at late vegetative stage (V10) and at kernel appearance (R2). POLY4 treatment had the greatest corn biomass throughout the growing season and in both years.



Notes: Statistics from USDA NASS 2019 survey. Cultivar: DKC 64-34; initial soil analysis in 2017: pH 5.6, 5.4% SOM, 23 mg P kg^{-1}, 103 mg K kg^{-1}, 3639 mg Ca kg^{-1}, 578 mg Mg kg^{-1}, 12 mg S kg^{-1}; in 2018: pH 6.2, 3% SOM, 21 mg P kg^{-1}, 93 mg K kg^{-1}, 2075 mg Ca kg^{-1}, 366 mg Mg kg^{-1}, 5 mg S kg^{-1}. Significance tested at 10% level.

Sources: Foxhoven, S.W. (2019) Polyhalite alters the uptake and partitioning of mineral nutrients in corn; University of Illinois: 64000-UOI-64011-17 & 64000-UOI-64010-17 (corn).

TRIAL FOCUS

Compare corn yield with POLY4 treatments and standard local practice over two years on fertile soils. The data presented is from two site years.

PARTNER

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LOCATION

Champaign, Illinois

DATE

2017 – 2018

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