



POLY4

A SIRIUS MINERALS PRODUCT

POLY4 - A NATURAL SOLUTION TO A BALANCED FERTILIZATION IN AFRICA



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Sustaining the future.

SIRIUS
MINERALS PLC



POLY4 – A FERTILIZER SUITABLE FOR 21ST CENTURY AFRICAN AGRICULTURE

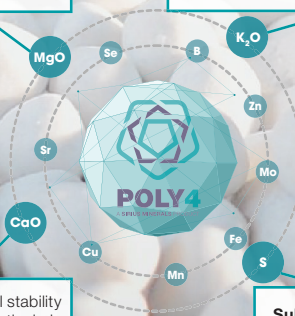
Fertilizer consumption must increase to support Africa's food security. Adopting POLY4 into fertilizer plans provides farmers with an innovative approach for best fertilizer management practices.

POLY4 is a naturally occurring, low chloride, multi-nutrient fertilizer. It includes four of the six key macro nutrients that all plants need to grow: potassium, sulphur, magnesium and calcium. It delivers a package of nutrients in one product and performs well as a straight fertilizer, where a base or starter material is needed, or as part of an NPK blend.

By improving the availability of a broad spectrum of nutrients for plants, POLY4 has been proven to improve the yield and quality of broad-acre and high-value crops supporting greater economic returns to a farmer. The fertilizer choice is also important, as it aims to provide the right mix of nutrients to ensure the plants are strong and less susceptible to disease.

Magnesium – enhances a broad spectrum nutrient uptake and is a key component of chlorophyll.

Potassium – aids plant metabolism, water regulation and drought stress; improves disease resistance and plant health.



Calcium – important for soil stability and plant tissue integrity, particularly for cell wall structure and root nutrient uptake.

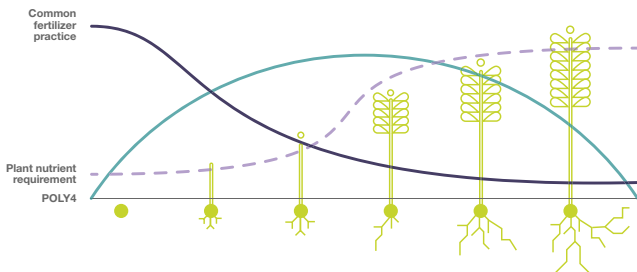
Sulphur – essential for protein formation and seed production; drives yield.

AFRICAN AGRICULTURAL TRANSFORMATION

Africa has the resource base that, if more intensively farmed, could easily produce the equivalent of another 100 million tonnes of grain each year. The increased production, comparable to the US corn belt, could add to the global supply and turn Africa into a net agricultural exporter.

Compared to other areas with similar agro-ecological environments, Africa's current yield results are low. The potential to increase yield was demonstrated by our POLY4 field trials in Tanzania, where we compared current fertilizer practices (FAO, World bank 2009) with balanced fertilization using POLY4.

NUTRIENT DELIVERY PROFILE (COMMON FERTILIZER PRACTICE VERSUS POLY4)



Nutrient mining in Africa also affects the nutrient balance and supply available to crops reducing yield and quality. The soil nutrient extraction reduces agricultural production and, subsequently, not enough food is produced to feed the growing population. Since most farmers are smallholders and increases in agricultural output help keep food prices low, a small farm-led agricultural development typically has a big impact on poverty. Thirtle, Piesse and Lin (2003) estimate that a 1% increase in crop productivity reduces the number of poor people by 0.72%.

POLY4's nutrient release profile aligns more closely with a plant's nutrient requirements. It can sustain existing crops and improve nutrient legacy and soil quality while enhancing sustainability.

POLY4 FERTILIZATION SUPPORTS YIELD

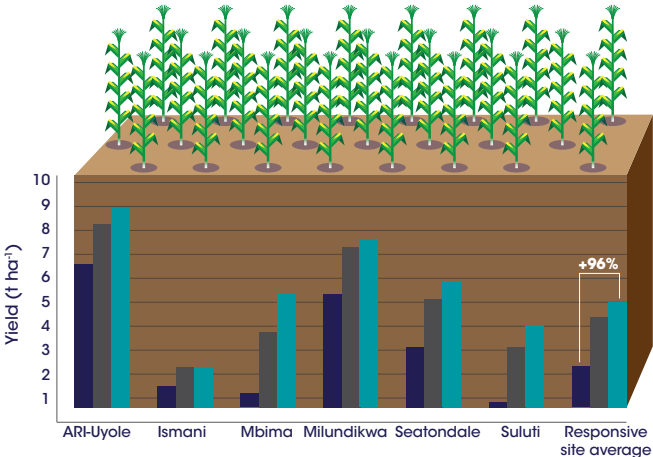
Corn is the largest crop grown in Tanzania with 6.7 million tonnes produced, accounting for 24% of all crops grown. Sirius Minerals established six corn trials across the Southern Highlands of Tanzania in partnership with Agricultural Research Institute – Uyole. The trials' objective was to evaluate POLY4 as a multi-nutrient fertilizer for corn and assess difference in yield response by changing the potassium source from MOP to POLY4.

“AGRICULTURAL DEVELOPMENT IS VITAL TO AFRICA’S ECONOMIC GROWTH AND FOOD SECURITY”

The application of potassium-based fertilizers prevents nutrient mining in the long term and aids crop growth. Across all locations in the Southern Highland region, corn responded positively to a multi-nutrient fertilizer plan. On average, the POLY4 option improved yield by 9% compared to N and P and by 13% compared to MOP.

CORN YIELD

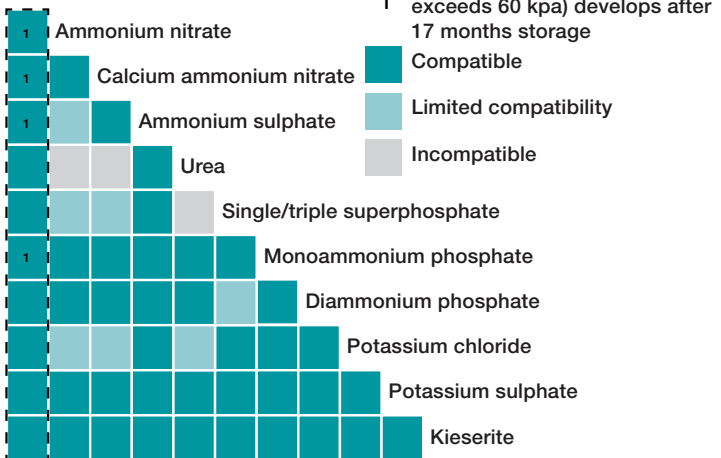
■ No fertilizer ■ MOP ■ POLY4



POLY4 IS IDEAL FOR NPK BLENDING

POLY4 is a unique feedstock for blends, supplying four out of the six macro nutrients essential for plant growth. It is ideal for NPK blending – it can reduce blenders' input costs and improve farmers' yields. The product can extend the overall shelf life of a blend offering practical benefits:

- No incompatibilities with common fertilizer products;
- 5.5. kgf crush strength;
- Low caking propensity;
- Critical relative humidity of 70%.



POLY4 IS AN EFFICIENT, EFFECTIVE, FLEXIBLE AND SUSTAINABLE FERTILIZER

POLY4 allows farmers to maximise their crop yield, quality and soil structure with one simple product.

POLY4 CHARACTERISTICS



Effective nutrient release



Low chloride



Critical relative humidity



Soil pH



POLY4

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Suitable crush strength



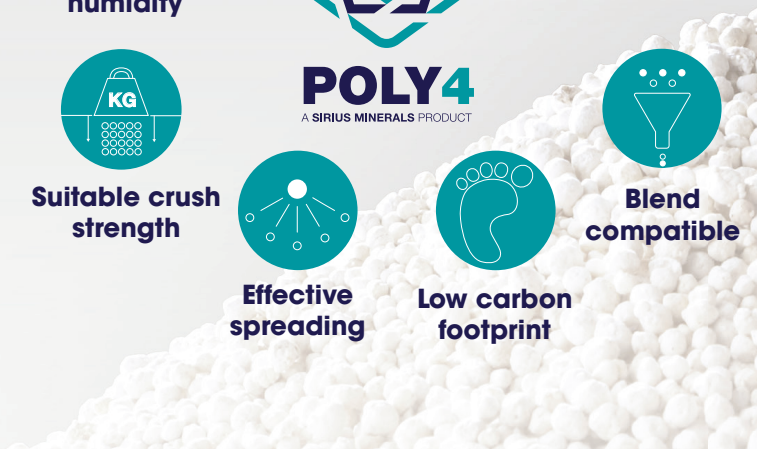
Blend compatible



Effective spreading



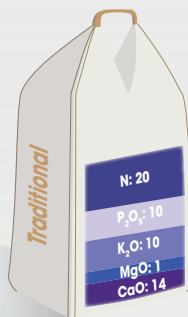
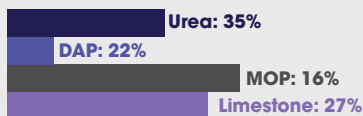
Low carbon footprint



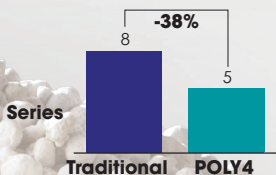
POLY4 FIT IN CURRENT POPULAR NPK AFRICAN BLENDS FOR BROAD-ACRE CROPS

20:10:10 NPK COMPOSITION

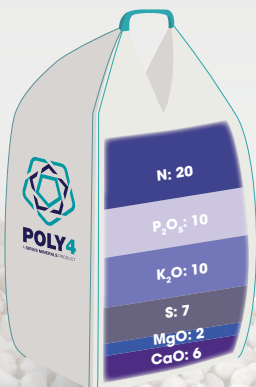
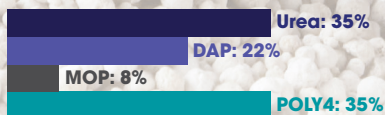
TRADITIONAL: INPUT



DECREASE IN CHLORIDE CONTENT



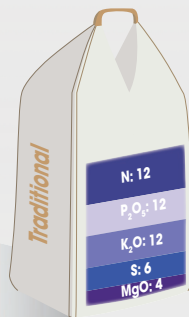
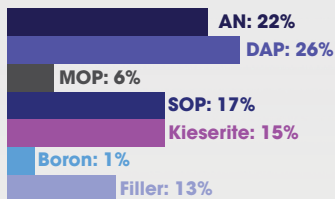
POLY4: INPUT



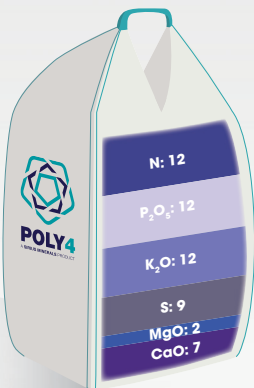
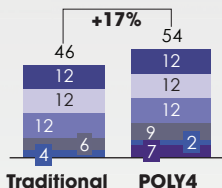
POLY4 FIT IN CURRENT POPULAR NPK AFRICAN BLENDS FOR HIGH-VALUE CROPS

TOBACCO: 12:12:12+6S+0.12B NPK COMPOSITION

TRADITIONAL: INPUT



INCREASE IN NUTRIENT CONTENT



POLY4: INPUT

