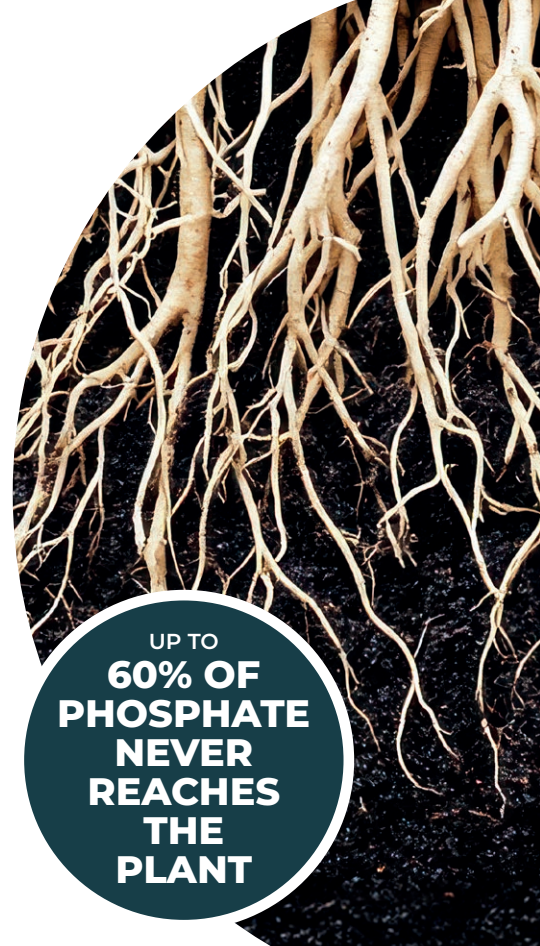




## Unlock bound phosphate & key micronutrients to boost nutrient efficiency & early crop performance

*Specialist Soil Nutrient Activators for range of crop types.*

Tap into your existing soil nutrient reserves. The De Sangosse range of soil-applied nutrient activators are designed to release tightly bound phosphate and essential micronutrients (such as zinc, iron, and manganese) in the root zone. By modifying the soil chemistry around the rhizosphere, they improve nutrient availability, uptake efficiency, and support stronger early crop development.



### MOBILISE NUTRIENTS. MAXIMISE YIELD.



#### UNLOCK PHOSPHATE EFFICIENCY

- ✓ Frees phosphate tied up by calcium, iron or aluminium
- ✓ Improves early-season availability in high or low pH soils
- ✓ Maximises return on past fertiliser investment



#### ACTIVATE MICRONUTRIENTS

- ✓ Mobilises soil-bound metals such as zinc, manganese, and iron
- ✓ Enhances nutrient balance without extra micronutrient input
- ✓ Effective for 4-6 weeks



#### BOOST EARLY CROP PERFORMANCE

- ✓ Improves root growth and early vigour
- ✓ Improves nutrient uptake efficiency in the rhizosphere
- ✓ Supports stronger establishment and yield potential

### Why Soil Nutrient Activators?

- **Unlocks what's already there** – activates phosphate and micros tied up in the soil.
- **Cost-effective nutrition** – reduces reliance on fresh phosphate and micronutrient inputs.
- **Compatible and easy to apply** – fits seamlessly with pre-em herbicides and liquid starters.
- **Proven mode of action** – backed by trials across a range of crops and soil types.
- **Supports sustainable farming goals** – improves nutrient use efficiency and reduces environmental risk.

### The Farmer Advantage

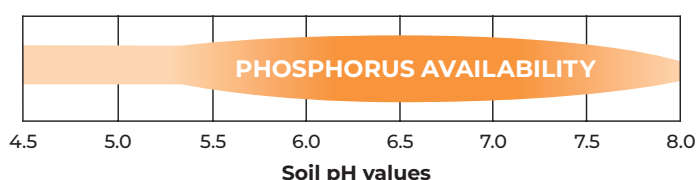
- **Makes better use of existing soil nutrients.**
- **Reduces reliance on fresh phosphate inputs.**
- **Drives early growth** for better resilience and yield potential.
- **Versatile application options** – fits seamlessly into current practice.
- **Environmentally smart** – improves phosphate use efficiency and reduces risk of surface water eutrophication.

## The problem with phosphate

Phosphate availability is a major constraint to UK crop production systems. When soluble phosphate fertilisers are applied to soil they become 'fixed' due to the presence of naturally occurring cations, forming less soluble minerals.

- In calcareous (alkaline) soils, phosphate is fixed by calcium cations ( $\text{Ca}^{2+}$ )
- In acidic soils, phosphate is fixed by cations of iron ( $\text{Fe}^{3+}$ ) and aluminium ( $\text{Al}^{3+}$ )

The reactive nature of phosphate leads to investment in P fertiliser becoming extremely inefficient. Unlike nitrates which are lost from the soil system through leaching or volatilisation, phosphate remains in the soil and can be made available to the crop slowly. De Sangosse Soil Nutrient Activators enhance this process to make better use of soil P reserves.



## Proven in trials

The De Sangosse range of Soil Nutrient Activators have been extensively tested in a range of trials and crop types spanning several years. In 10 out of the 12 trials (below), the yield increases were statistically significant.

Year	Location	Cultivar	Crop Type	Soil pH	P Index	Soil Type	Control Yield	Treated Yield
2013	Flinton	Cordiale	Winter Wheat	6.9	4.1	Deep loam	8.8b	9.5a
2013	Kirby Grindalyte	Santiago	Winter Wheat	7.9	1.1	Silt over chalk	10.5b	11.1a
2013	Stetchworth	Cordiale	Winter Wheat	7.8	2.0	Sandy loam over chalk	7.9a	8.4c
2013	Sherburn	Pearl	Winter Barley	7.7	2.5	Calcareous clay over limestone	7.3c	7.7a
2010	Beadlam	Westminster	Spring Barley	7.7	2.1	Coarse loam over sand	5.9a	6.2a
2010	Stetchworth	Odyssey	Spring Barley	7.4	1.8	Sandy loam over chalk	6.4a	6.8b
2012	Sinnington	Kentaurus	Maize	7.7	2.8	Silty loam over clay	3.9d*	5.7b*
2012	Sinnington	Beacon	Maize	7.8	3.6	Coarse loam over sandstone	10.3b*	13.6a*
2014	Sherburn	Avatar	WOSR	7.6	2.8	Loamy clay over clay	4.0d	4.3bcd
2014	Ingham	Quartz	WOSR	7.6	2.7	Fine loam over clay	3.8d	4.2c
2017	Hooton Pagnell	Russet Burbank	Potatoes	7.7	2.6	Sandy loam over chalk	58.7e	67.7bc
2017	Hooton Pagnell	Russet Burbank	Potatoes	7.7	2.6	Sandy loam over chalk	57.8f	70.8ab

Sources: CMI, NDSM, SAACS  
\* Dry matter

## Crops and Application

The De Sangosse range of Soil Nutrient Activators are recommended for use in a wide range of crops, including, cereals, oilseed rape, maize, potatoes, sugar beet, leafy vegetables and root vegetables. They are best applied during periods of active growth, avoiding

cold soils or dry/rapidly drying soils. They are best timed before a period of wet weather is forecast. Apply from pre-emergence of the crop, or at planting/over bare ridges in potatoes. For more information, please contact your agronomist or get in touch with us at De Sangosse.

## What are they?

The De Sangosse range of Soil Nutrient Activators contain a proprietary blend of organic acids and sequestrants. When applied to soil, they effectively improve the availability of phosphate reserves to an established crop, allowing growers to reap the benefits of phosphate historically applied to the soil. They also protect newly applied phosphate fertilisers from being 'locked up.'

Improved access to phosphate supports crop establishment and root growth. Thus, the developing crop has better access to water and nutrients and is set up to perform optimally.

## How do they work?

These Soil Nutrient Activators dissolve insoluble phosphate making it available for the growing crop. They work in the soil water displacing phosphate locked up with  $\text{Ca}^{2+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Al}^{3+}$  cations.

In water, the Soil Nutrient Activator components have a strong (negative) electric charge. Cations will preferentially bind to the Soil Nutrient Activator rather than other soil components, including phosphates.

While a cation is complexed by the Soil Nutrient Activator, it cannot interact with other anions, for example phosphate. Thus, the Soil Nutrient Activator effectively improves availability of phosphate which would otherwise be negatively affected by the presence of these cations.

The Soil Nutrient Activators also increase the uptake of important trace elements, such as zinc, manganese and copper because their mode of action facilitates the transport of cations to the root system.