



SUNFERT DUO



N-21% / S-24%

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Granular fertilizer «SUNFERT DUO» is a key product of Fertilife Benelux B.V. plant

SUNFERT DUO is a highly efficient, water-soluble, nitrate-free, environmentally friendly Nitrogen-Sulphur fertilizer with an extended-release period.

SUNFERT DUO is based on ammonium sulphate and consists of N-21% and S-24%.

SUNFERT DUO provides high agronomic and economic efficiencies for growing key crops and can be used as a basal, starter, side/top dressing fertilizer.

SUNFERT DUO is mainly used as a direct soil fertilizer or as a compatible component of dry blend fertilizers, providing primary (Nitrogen) and secondary (Sulphur) macronutrients, essential for plant growth and nutrition. Classified as Straight Solid Inorganic Macronutrient Fertilizer according to Regulation (EU) 2019/1009.

Indicator	Guaranteed norm
Total Nitrogen (N):	21 % wt
Ammoniacal Nitrogen	21 % wt
Sulphur (S)	24 % wt
Water-soluble Sulphur trioxide (SO ₃)	60 % wt
Free Sulphuric Acid	≤ 0,05 % wt
Water content	≤ 0,5 % wt
pH	5,0 ± 0,5
Granule strength	>4,5 kgf/granule
Bulk density	950 kg/m ³ ± 30
Granulometry (mass fraction)- from 2,5 to 5,5 mm, not less:	90 % wt
Free flowing, %	100
Water solubility, %	100



SUNFERT DUO has a full conformity assessment under Regulation (EU) 2019/1009. EU-type Examination Certificate - FB 006605 001 (Notified Body 2806).

THE BEST COMPATIBILITY WITH NBPT

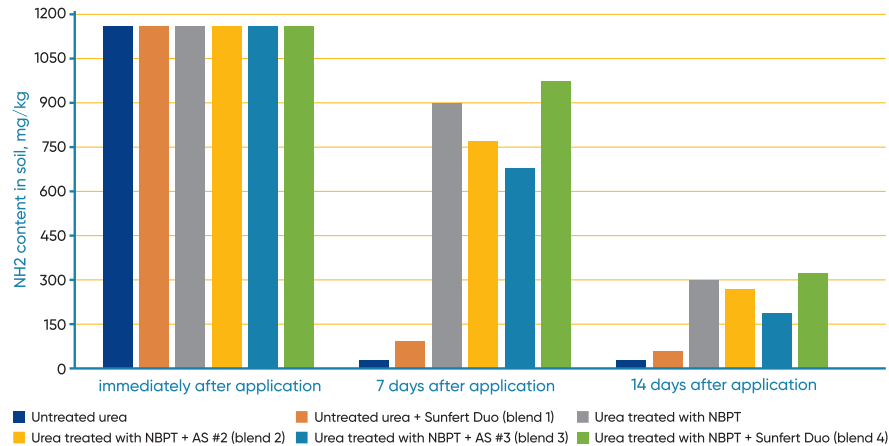
SUNFERT DUO is perfectly compatible with NBPT. That's why it is the best choice on the European Union market for blending with NBPT-treated urea in sense to ensure the maximum efficiency of urease inhibitor and prevent the nitrogen losses when applying such blend for all crops.

Comparison studies have demonstrated the highest preservation of the NBPT during storage and the lowest nitrogen losses after soil application of blend.

Table 1. The 14-day dynamics of NBPT content on various fertilizer blends (by the LABORATORY SGS FRANCE).

No.	Name of fertilizer	The initial content of NBPT, g/kg of Urea	NBPT content after 7 days of storage, g/kg of Urea/ decrease in %	NBPT content after 14 days of storage, g/kg of Urea/ decrease in %
1	Urea treated with NBPT	1,65	1,50/9,21	1,43/13,16
2	Blend № 1	1,65	0,74/55,26	0,61/63,16
3	Blend № 2	1,65	1,43/13,16	1,35/18,42
4	Blend № 3	1,65	1,39/15,79	1,35/18,42
5	Blend № 4 with SUNFERT DUO	1,65	1,43/13,16	1,39/15,79

Table 1 shows that during storage of the blend, **SUNFERT DUO** causes much less decomposition of NBPT than competition's products and retains urease inhibitor at nearly the same level as just on NBPT-treated urea.



Graph 1. Dynamics of NH2 content in soil after various fertilizer blends were applied (SGS INSTITUT FRESenius GmbH).

Graph 1 shows that **SUNFERT DUO** with NBPT-treated urea ensures the best result for preservation of nitrogen in the soil comparing to competition's products on the market. Moreover, the loss of Nitrogen from soil is even slightly lower with **SUNFERT DUO** than NBPT-treated urea alone. This is a unique advantage of our product for the most effective nitrogen fertilization.

HIGH TECHNOLOGICAL EFFICIENCY

A set of advantages makes **SUNFERT DUO** one of the most technologically advanced products for use on the European Union market:

- The granule size and granulometric composition ensure an even distribution of **SUNFERT DUO** with a spreading width up to 36 m, which is proven by the results of AMAZONE test (test ID: 583023150).

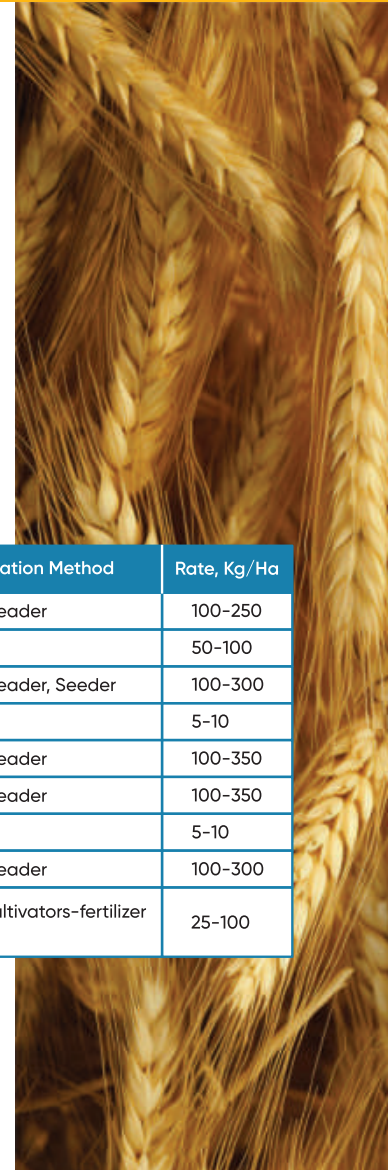
- **SUNFERT DUO** may be blended with the most widely used mineral fertilizers in advance or just prior to applying. The results of the trials show that blends with **SUNFERT DUO** do not segregate during transportation in big bags and spreading.

- The blending of **SUNFERT DUO** with granular urea creates the optimal composition, which ensures effective and uniform application of the blend. Specialists from AMAZONE have created settings for uniform distribution of such blend by all their main machine types with width 33-36 m depending on spreader type (test ID: 583023212).

- **SUNFERT DUO** is suitable for all types of soils and all crops, primarily intended for crops which prefer Nitrogen in Ammonium vs Nitrate form and for plants with high Sulphur demand. It can be used in a wide range of climatic conditions and different periods of plants' vegetation. This is a significant advantage vs Urea or Ammonium Nitrate.

Plants	Time of Application	Application Method	Rate, Kg /Ha
Winter and Spring Cereals	Pre-sowing	Fertilizer spreader	100-250
	Sowing	Seeder	50-100
	Root feeding	Fertilizer spreader, Seeder	100-300
	Foliar feeding	Sprayer	5-10
Winter and Spring Canola, Radish, Mustard	Pre-sowing	Fertilizer spreader	100-350
	Root feeding	Fertilizer spreader	100-350
	Foliar feeding	Sprayer	5-10
Corn, Sunflower	Pre-sowing	Fertilizer spreader	100-300
	Root feeding (row spacing)	Row-corn cultivators-fertilizer dispensers	25-100

ATTENTION: The above-mentioned recommended rates are based on unfertilized substrates. Please be aware that these are general recommendations.



SUNFERT DUO



EFFECTIVE

- provides effective nitrogen-sulphur plant nutrition, increases crop yield and boosts of resistance to environmental stresses.
- the optimum choice for feeding high protein crops that are sensitive to Sulphur deficiency.
- increases the solubility of nutrients, those are difficult to access, by lowering the pH of the soil locally for a short period of time without altering the reaction of the soil solution as a whole.
- in foliar applications, SUNFERT DUO is rapidly absorbed by the plant through the leaf surface and is immediately involved in the plant's metabolism.

TECHNICAL

- perfectly compatible with urease inhibitor NBPT and can be used safely and efficiently for production of fertilizers blends containing NBPT treated urea.
- granulometric composition and high hardness of granules ensure good applicability for production of blended fertilizers.
- blend of SUNFERT DUO and urea provides uniform spreading up to 36 m width.
- able to bind iron and calcium cations in aqueous solutions, which significantly increases the efficacy of pesticides, especially herbicides based on 2,4-0, glyphosate and glufosinate, when used in tank-mixes.

SAFE FOR PLANTS AND FRIENDLY FOR ENVIRONMENT

- the prolonged release of Nitrogen prevents the concentration of ammonia in the immediate vicinity of young plants, reducing the toxicity of the fertilizer in the event of a lack of moisture.
- has a lower level of greenhouse gas emissions compared to other Nitrogen fertilizers due to the low mobility of Nitrogen.
- can inhibit the activity of Nitrogen metabolism enzymes, particularly urease and nitrifying bacteria which significantly reduces nitrogen losses due to leaching and volatilization.

PHYSIOLOGICAL EFFECTS FOR PLANTS AND SOILS

Nitrogen and Sulphur are key links in the chain of amino acids synthesis. The synergistic interaction of these nutrients activates protein metabolism in plants, ensures their active development, increases resistance to abiotic stresses, reduces nitrate levels and improves the quality of future crops.

Nitrogen in ammonium form enters to the plant by active transport, while the positive charge of Ammonium promotes the rapid uptake of anions: phosphates, sulphates, borates, etc.

Sulphur in the form of anionic-sulphate can bind amides, preventing Nitrogen losses and increasing the biological value of the fertilizer.

Ammonium activates the decomposition of plant residues by microorganisms, increasing the content of organic matter in the soil and promoting the transformation and bioavailability of other nutrients. After mineralization, the Nitrogen immobilized by the microflora becomes available for plant uptake.

FERTILIFE BENELUX B.V.

FERTILIFE BENELUX B.V. is an innovative plant, which produces granular fertilizers with a total capacity of 125,000 tons annually. The pressure compaction technology provides the lowest level of greenhouse gas emissions (carbon footprint) in comparison with other granulation technologies. A high level of automation ensures energy-efficient and environmentally friendly production.

FERTILIFE BENELUX B.V. is located in Terneuzen port, the Netherlands. The infrastructure of the plant includes a port warehouse and a quay. The advantages of the production complex are additional terminal's warehouse capacity of more than 100,000 tons, convenient logistics by sea and river, and closeness to the main sales markets.

We supply our plant nutrition products worldwide providing farmers with access to high-quality fertilizers and ensuring the basis for successful and sustainable agriculture.

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