

Effectiveness and Using Possibilities of **TURF activ**

TURF activ – an energy-bearing nutrient component

TURF activ is an energy-bearing nutrient component, consisting of three groups of molecules (sugar compound, phosphoric acid and nitrogen base). This nutrient component is an organic sugar phosphoric amide in form of a liquid concentrate, which is diluted with water and applied for soil amelioration.

The application of **TURF activ** in a liquid form enables the energy-bearing source of nutrients (sugar compound) to reach deeper soil layers and to stimulate the growth of micro-organisms, which activates the soil life. The soil thus developed by the micro-organisms provides favourable growth conditions for plant roots. For reasons of their organic structure these compounds are not subject to leakage. The phosphorus carrier has a negative surplus charge and thus a colloidal effect. Anchored in the soil, it fulfils several functions:

- The organically bound phosphorus and nitrogen resources enhance the root growth. Especially in soils with a low nutrient supply, the nutrient deposits created by **TURF activ** enable the roots to reach into deeper soil layers.
- The sugar compounds activate the microbial soil life. The developing micro-organisms are settling in the soil and support the plants in taking up the nutrients and the roots to grow deep into the soil.
- The negative surplus charges of the phosphoric component of **TURF activ** are able to bind positively loaded nutrients (cations like ammonium, potassium, calcium and magnesium) which are present in the soil solution. Thus, **TURF activ** increases the nutrient storage capacity and enhances the root growth.

The significant increase in root growth as well as of the biomass have even more favourable effects on the plants and the soil alike:

- The nutrient resources in the soil are intensively used. The root surface through which the plants take up the nutrients is large enough.
- The far-branched, deep-reaching roots can optimally use the water supplies of the soil.
- The far-reaching root network provides a good protection against erosion (e.g. in slopes/embankments) and against shearing strength (e.g. on sports fields), respectively.
- A well-developed root network loosens the soil and prevents it from being consolidated.
- The withered biomass increases the humus content of the soil and elevates the nutrient storage capacity by forming new organic colloids (humus compounds).

TURF activ produces sols and gels

In connection with water **TURF activ** produces gels and sols. The highly molecular gels, which are hardly mobile in the soil, serve to increase the water and nutrient storage capacity. Larger soil pores, which are unable to retain water against gravity, are filled by means of the gels and thus made smaller, so that the water can be retained in the smaller pore space by a capillary effect. A higher water storage capacity means a considerable improvement of the growth conditions of the plants and micro-organisms during dry periods. Gels improve the netting of soils which lack the ability of absorption (e. g. quartz sand) in case of the existence of inorganic or organic complex-forming substances. This effect can be accelerated by the combined use of the organic slow-release fertilizer **TURF forte**. These mixed gels, formed through the bond with nitrogenous organic compounds of the soil, are able to work for several years and assure therefore the long-lasting soil-improving effect of **TURF activ**.

The low-molecular sols resulting from **TURF activ** are mobile in the soil and chemically active. The sols decrease the ionic activities of the soil solution. Moreover, very small soil particles are being interlaced to form larger aggregates. This decreases the actual concentration of ions in the soil solution. The few activities and low concentration of the ions lead to a reduction of the osmotic values in the soil solution and in the plant. Thus the plants need less energy for their water and nutrient-absorbing capacity.

Because of that the growth conditions are improved during critical vegetation periods, e. g. dry periods. **TURF activ** has following effects:

- Reduction of losses through leakage by complex binding
- Increase of nutrient storage capacity
- Increase of water storage capacity in light soils
- Decrease of the osmotic value in the soil solution
- Less energy needed by the plants to take up water and nutrients
- Increase of buffering capacity
- Improvement of soil structure
- Decrease of injurious effect of sodium
- Prolongation of productive vegetation period

The Effect of TURF activ in Combination with TURF forte

TURF activ can be used individually or in combination with the slow-release fertilizer **TURF forte** (made of dried, granulated biomass of soil fungi and soil bacteria). Through the biomass which is distributed on the soil surface, the plants are provided with another long-lasting nutrient resource and the micro-organisms with another basis to create an active soil life, respectively.

Both **TURF activ** and **TURF forte** are able to reduce the problems of felt formation of the roots and grass, and to balance a lacking soil structure, an unbalanced nutrient supply and insufficient rooting.

Recommended Quantities of **TURF activ**

Range of application	Product	Quantity in g/m ²	Time of application
Lawns and sports fields	TURF activ plus TURF forte	75 – 100 g 150 – 200 g	spring and autumn
Planting areas (arable soil)	TURF activ	100 g	during planting period
Planting areas (raw soil)	TURF activ plus TURF forte	75 – 100 g 150 – 200 g	during planting period
Tree sanitation:	v. techn. information on tree sanitation		
Grassing of subsoil slopes	TURF activ plus TURF forte	75 – 125 g 150 – 250 g	total vegetation period
Grassing of gravel/lawn parking lots	TURF activ plus TURF forte	50 – 100 g 150 – 300 g	total vegetation period

Precaution reg. **TURF activ**:

According to hazardous goods regulation: **1805 Phosphoric acid, liquid; III, Class 8 Corrosive.**

When watering down concentrate, please make sure to wear protective goggles and gloves.

R 36 = irritates eyes

S 25 = avoid contact with eyes

Technical Application of **TURF activ**

TURF activ is a concentrate which has to be diluted with water in a minimum ratio of 1 to 20 (Please observe safety precautions!). **TURF activ** easily becomes an aqueous solution (e. g. by stirring or pumping) and does not have to be stirred again. The so-obtained dilution of **TURF activ** is applied onto the soil surface via hydroseeders, sprinklers, water tanks with suction pumps, hoses, watering cans etc. Please, do also read our instructions for the application.

A product of
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