

# A product of SW-Düngesysteme

From nature - for nature

## **TURF** *activ*

### Product information:

**TURF activ** is an organic slow-release liquid fertilizer (energy-bearing source of nutrients). This nutrient component is an organic sugar phosphorus amide in the form of a liquid concentrate, which is diluted with water and applied for soil amelioration as well as long-term fertilization. The application of **TURF activ** enables this highly-molecular source of nutrients to reach deeper soil layers and is, therefore, not washed out owing to its organic structure. The phosphorus compound contained in the molecule has negative electric endings and is able to attach the nutrients (cations). The application of **TURF activ** fulfills the following functions:

- The organically bound phosphorus and nitrogen compounds support the root growth. Especially in soils with a low level of nutrients, a good improvement of the roots to reach deeper soil layers could be achieved.
- The sugar compounds are able to stimulate the soil life. Micro-organisms develop in the soil and enhance the plants in taking up the nutrients and the roots to grow deeper.
- The negative electric endings of the phosphorus compounds in **TURF activ** are able to attach cations like ammonium, potassium, calcium or magnesium. Thus, the nutrient storage capacity and root growth are increased by **TURF activ**.

The significant improvement of the root growth and the increase of root biomass have even more advantages for soil and plant:

- The nutrient deposits in the soil are used more intensively. The superficial area of the roots through which the plants take up the nutrients is considerably increased.
- Owing to the massively growing and far-reaching roots, the plants make optimum use of the water supplied in the soil.
- The massive and far-reaching roots protect the soil from erosions (e.g. in case of embankments/slopes) and from shearing stress (e.g. in sports fields).
- The intense rooting loosens up the soil and prevents compression.
- The root biomass developed increases the content of humus step by step, and produces a rise in the storage capacity of nutrients by forming new organic colloids (humus compounds).

#### Contents of nutrients:

|                   |                                    |
|-------------------|------------------------------------|
| Organic substance | 50 %                               |
| Total nitrogen    | 9 % N                              |
| Total phosphorus  | 11 % P <sub>2</sub> O <sub>5</sub> |
| pH value          | 1.5                                |

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 capacity to store up water and nutrients.

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These mixed gels, formed through the bond with nitrogenous organic compounds of the soil, are able to work for several years and assure a long-term improvement of the soil by **TURF activ**.

The effect of **TURF activ** is even increased in combination with the organic slow-release **TURF forte** (granulate).

The low-molecular sols resulting from **TURF activ** are mobile in the soil and chemically active. Moreover, very small soil particles are being interlaced to form larger aggregates. This decreases the actual concentration of ions in the soil solution, because part of the ions attach to the surfaces of the negatively charged molecules of **TURF activ**. The few activities and low concentration of ions lead to a reduction of the osmotic values in the soil solution.

Thus, the plants are able to take up nutrient salts of low saturation potential, i.e. they need less energy to take up water and nutrients, and can therefore produce more biomass. The conditions of plant growth are improved, especially in times of dryness.

**TURF activ** has the following effects:

- Increased nutrient storage capacity by building interchange structures, i.e. the soil can deposit more water and prevent leakage.
- Intensified root growth, especially in case of

Sports fields, golf courses and tree planting holes.

- Increased water storage capacity in easily permeable soils.
- Reduction of the osmotic value of the soil solution; easy take-up of nutrients through the roots.
- Less energy needed for taking up nutrients and water.
- Increased buffering capacity, i.e. the pH value can be stabilized.
- Amelioration of the soil structure.
- Decreased damage by the salts (e.g. due to the attachment of sodium).
- Prolonged period of productive vegetation.

Fields and amounts of application:

**TURF activ** can be used for revitalisation of sports fields, golf courses and lawns as well as for the improvement of fully-grown trees. It is also recommended to apply the fertilizer to planting holes.

The fertilizer can be applied throughout the whole year, except in frost. The amounts to be used

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vary from 50 to 150 g/m<sup>2</sup> p.a., depending on the type of plant and treatment.

