

The carrot

Fertilizing the carrot

The **carrot** grows in different areas, from the north to the south of Italy, and in some areas benefits from the Protected Geographical Indication designation (carrot from the Fucino Plateau, Ispica carrot).

The carrot needs loose, fresh and deep soils able to avoid water stagnation, allowing the taproot to develop regularly, maintaining the typical cylindrical shape without deformation.

For this reason, it is preferable to cultivate the carrot in predominantly sandy soils where the operations of mechanical harvesting, cleaning and washing of the taproot are facilitated. These soils are generally poor in organic matter and therefore, before sowing, they require the distribution of good quantities of humified organic matter. It is recommended to use well decomposed and humified manure to avoid triggering plant diseases, especially fungal ones, which attack the taproot and make it unsuitable for marketing.

The soil preparation

In order to maintain and improve the physical-chemical characteristics of the soil, **UNIMER** recommends the distribution of **SUPERSTALLATICO**, a soil improver based on bovine and equine manure subjected to a long process of maturation and controlled composting which favors its humification with the formation of high quantities of humic and fulvic acids. In tired soils, lacking in organic matter, **MICROLIFE** represents a further choice: in addition to Superstallatic quality, it contains a selected microbial consortium of rhizosphere fungi and bacteria which, revitalizing the soil microbiome, improves the development of the root system and the efficiency in the absorption of nutrients and water. The microbial consortium used in the formulation of MICROLIFE, containing strains of Tricoderma, Aspergillus, Pseudomonas and Bacillus, also contributes to solubilizing the nutritional elements naturally contained in the soil, in particular phosphorus and microelements, therefore favouring their absorption by the plant.



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Pre-sowing fertilization

The pre-sowing fertilization allows the carrot to obtain the needed macro, meso and microelements. UNIMER proposes **DIABLO S** an organo-mineral fertilizer NPK 9-12-18 containing **calcium (8)**, **sulfur (15)** and **microelements**, with a low chlorine content. Its efficiency is enhanced by the humified organic substance content which protects the nutritional elements from leaching and insolubilization. Thanks to the humic and fulvic acids, **nitrogen** is retained and preserved from excessive leaching and gradually released into the circulating solution, following the needs of the plant. The carrot, in fact, despite having a considerable need for this element, suffers from its excessive availability which favors the leaf development at the expense of the taproot. A gradual and constant nitrogen nutrition is also the ideal condition to avoid excessive sensitivity to attacks of fungal leaf diseases.

Phosphorus, an element that provides energy for the plant's metabolic processes and promotes root development, is also protected from insolubilization phenomena that occur especially in those soils poor in organic matter, such as the sandy ones used in carrot cultivation.

The carrot also has high **potassium** requirements, an element that favors numerous enzymatic functions such as the synthesis of sugars, pigments and other substances that directly influence the organoleptic characteristics of the taproot. The carrot accumulates considerable quantities of potassium in the root, resulting the richest food containing this element.

The carrot is also particularly demanding **calcium**, which is generally lacking in sandy soils. It has a key role in the formation of cell membranes, improving their consistency and robustness to obtain taproots that better resist mechanical handling and harvesting and increase post-harvest shelf life. Sulfur, like nitrogen, performs a synergistic action for protein synthesis. Its availability guarantees optimal metabolic activity for the plant, favoring its regular development.

DIABLO S also contains microelements such as **boron**, important for the translocation of sugars from the leaves to the taproot, impacting its sweetness and flavor. This element is often lacking in sandy soils because easily leachable; thanks to the protection of humic and fulvic acids the assimilation by the plant is enhanced. **Iron** allows the optimization of the photosynthesis by improving the color of the leaves, particularly important for fresh consumption market. **Zinc** is a microelement that operates into various enzymatic reactions, regulating the metabolism and the development of the plant.

