

# Corn

## Fertilizing corn

Over the past few years, genetics have provided the farmer with extremely performing varieties of corn, capable of producing 200 quintals of dry grains per hectare. These levels of production ask for the adoption of an advanced cultivation technique and the rationalization of the high inputs that such performances require. For several years and in collaboration with important multinational and national companies, UNIMER has taken part in the **COMBI-MAIS project**, which aims to obtain productions of superior quality in the Italian cultivation area. The techniques of smart agriculture, monitoring and precision agriculture, tested in the project and applied in the field, are able to support and improve the quantitative, qualitative and economic productivity of this crop.

## Pre-seeding fertilization

Among the fertilizers that can be used on corn for pre-seeding fertilization, the most used is **WINNER NP (Mg) 11-25 (2)**. UNIMER also recommends **FLEXIFERT NP 9-21**, with ions exchange resins; for starter fertilization localized at sowing **SPIGA D'ORO NP (Ca) 8-18 (8)** and **MAXI FERTIL NP (S) 20-10 (10)** are also recommended.



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## Coverage fertilization

The preferred product for coverage fertilization is **SUPER AZOTEK N32 (S7)**, an **organo-mineral nitrogen fertilizer** containing **32% of nitrogen** of which **1% is organic, 28.5% is ureic** and **2.5% is ureic with urease inhibitor (NBPT)**; its nutritional profile is completed by the presence of **sulfur** (7% of  $\text{SO}_3$ ). The organic fraction contains **8% of organic carbon** of which **2.5% is humic and fulvic**. The product must be used starting from the stage of 4-6 leaves until the beginning of the growth phase. Given the gradual release of nutrients, SUPER AZOTEK N32 can be applied earlier.

**SUPER AZOTEK N32 nourishes the plant**, optimizing the photosynthetic activity and improving its physiological condition. Its peculiar formulation allows a **gradual and differentiated nitrogen release**, which satisfies the needs of the crop during the various cultural phases. The **humic and fulvic substances** present in its composition protect the nutrients from leaching and ammonization and considerably improve the nutritional efficiency of fertilization. **Urea nitrogen** becomes available during the growth phase, when the plant highly needs it for the formation and growth of the vegetative system. The **urea component with urease inhibitor** also supports the vegetative activity during the flowering period, allowing a better fruit-setting of the cornstalk. The mineralization of **organic nitrogen** and its radical absorption contribute to the preservation of a high metabolic level during the synthesis and accumulation periods that characterize the padding and ripening phases of the cornstalk, with positive effects on the **size and specific gravity of the grain**, also positively influencing the **stay green** of the plant. This is especially relevant for the farmers who use the crop for the purpose of silage maize: a prolonged stay green widens the harvesting window and improves it, resulting in **high quality silage**, with higher starch content and without negatively affecting its digestibility. Grain producers also benefit from the product: the greater consistency of the corn stalk during harvest makes late threshing easier even when it is done under less favorable conditions. Like nitrogen, **sulfur** is a fundamental element for the production of sulfur amino acids and positively affects the photosynthetic activity of the plant; this element considerably improves the vegetative state of the crop, especially in poor soils or in those cultivated as meadow hay or with cereals, where regular administrations are not made.



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