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SOIL MINERAL NUTRIENTS ARE NECESSARY FOR FORMATION OF ORGANIC MATTER IN PLANTS

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The green material of living plants such as horticultural crops consists of organic matter, water and minerals. The relative amounts for green plant material water is always present in the highest proportion and the minerals in the lowest. The minerals make up only a comparatively small proportion of the plant's dry matter. They are nevertheless of extreme importance because they enable the plant to build up organic materials for various plant organs. This phenomenon takes place through the photosynthetic process system through the chlorophyll as the most important photoreceptor in plants. Some of the most important elements required in plants are C, H, N, P, Ca, Mg, K, Fe, B, Zn, Mo and Si. Some of them are involved in the protein synthesis and as integral part of chlorophyll structure such as Mg in which is located exactly in which is located exactly as the most important photoreceptor in plants with Mg located at exactly the center of chlorophyll structure. Some of the minerals are involved in many enzymatic reactions, water relations in plants, activation of starch synthesis, root growth and seed formation and energy storage as ATP and ADP, and lead to increase oil content of many crops. Others involved in cell elongation and division and constituent of chromosome structure in addition to carbohydrate translocation in plants in addition to involvement in proper pollination and fruit and seed set. Although some of the mineral nutrients are structural component in the oxidation-reduction reactions some of the metabolic process within the plant organs. In addition, some of the nutrients involve in the mechanisms for some plant growth regulators such as auxin metabolism also others might be involved in stabilizing ribosomal fractions. Finally, it is well known that the quality and structure of plants cell wall is more related to some nutrients such as Ca in which shows the importance in postharvest life of most of horticultural commodities, or the others may be to contribute to the structure of cell walls and leads to allow more light to be transmitted to the photosynthetic tissues below the epidermal cells in the leaves. Residual organic matter in the soil gets decomposed by soil microorganisms thus releasing the minerals back into the soil.

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