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## Fundamentals of Soil Science

### 1. Soil as a Medium for Plant Growth

... Soil is the interface between the living and the dead – where plants combine solar energy and carbon dioxide of the atmosphere with nutrients and water from the soil into living tissue. ... The farmer regards soil as a medium for plant growth. ... Basically, plants growing on the land depend on the soil for water and nutrient elements (Figure 1). Beyond this, the soil must provide an environment in which roots can function. This requires pore spaces for root extension. Oxygen must be available for root respiration and the carbon dioxide produced must diffuse out of the soil instead of accumulating. An absence of inhibitory factors, such as extreme temperature, extreme acidity and alkalinity, impenetrable layers, disease organisms, toxic substances, or excess salts is essential. Roots anchored in the soil also hold the

plant erect.

**References**

Foth, H. D. 1978. Fundamentals of  
Soil Science. John Wiley & Sons,  
New York, USA

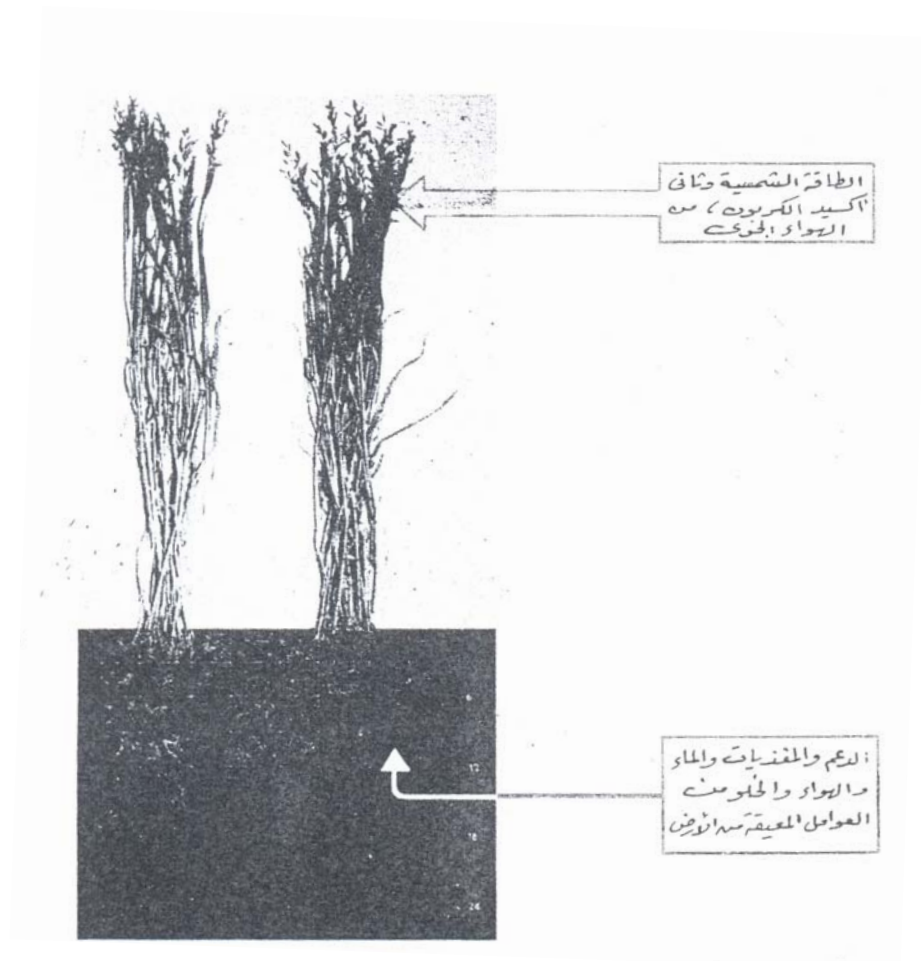


Figure 1 A summary of plant growth factors. (The background plants are oats.) (Source: Foth, 1978).

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