

# Iron: importance, signs of deficiency/excess, and sources

## Iron: Importance, Signs of Deficiency/Excess, and Sources

Iron is a crucial nutrient for cannabis plants as it plays a vital role in many physiological processes. It is considered a micronutrient, which means that it is required by plants in small amounts. In this tutorial, we will explore the importance of iron for cannabis growth, identify and differentiate between signs of iron deficiency and excess, discuss various sources of iron, and learn how to address iron-related nutrient issues.

### 1. Significance of Iron as a Nutrient for Cannabis Growth:

Iron is an essential component of enzymes involved in chlorophyll synthesis, energy transfer, and respiration. It is necessary for the conversion of light energy into chemical energy through photosynthesis. Iron also aids in the formation of proteins and enzymes required for plant growth and development.

### 2. Identifying Symptoms of Iron Deficiency and Excess in Cannabis Plants:

Iron deficiency in cannabis plants, also known as iron chlorosis, can lead to yellowing of leaves, starting from the newer growth. This yellowing usually starts between the veins, giving the leaves a characteristic interveinal chlorosis. As the deficiency progresses, the leaves may become completely yellow or even white. In severe cases, the leaves may dry out and eventually fall off.

On the other hand, excess iron in the soil can lead to toxicity, causing dark green leaves with a shiny appearance. The affected leaves may also exhibit signs of burning or scorching at the tips and edges. Iron toxicity can hinder nutrient uptake and negatively impact plant health, resulting in stunted growth and reduced yields.

### 3. Various Sources of Iron:

#### a. Organic Sources:

- Compost: Organic composts, such as leaf mold, manure, and kitchen compost, can contain a significant amount of iron. Adding compost to the soil can help increase iron availability.
- Mulch: Using organic mulches like grass clippings or shredded leaves can provide a slow-release source of iron to the plants.
- Organic Fertilizers: Natural fertilizers like blood meal, bone meal, and fish emulsion are rich in iron and can supply this nutrient to the cannabis plants.

#### b. Inorganic Sources:

- Iron Chelates: Chelated iron products, such as iron EDTA or iron DTPA, are commonly used to address iron deficiencies. These chelates help to increase iron availability in alkaline soils.
- Iron Sulfate: Iron sulfate is a quick-release form of iron that can be applied as a foliar spray or soil drench to address iron deficiencies.

### 4. Role and Functions of Iron as a Micronutrient for Cannabis Plants:

Iron plays a vital role in the production of chlorophyll, which is necessary for photosynthesis. It assists in electron transport during the light-dependent reactions of photosynthesis, helping to generate energy for plant growth. Iron is also involved in the synthesis of hormones and enzymes responsible for various metabolic processes, including nitrogen fixation, respiration, and DNA synthesis.

#### 5. Creating a Customized Nutrient Schedule:

To ensure proper iron levels in cannabis plants, it is important to create a customized nutrient schedule that addresses the specific needs of different strains and growing mediums. Consider the following steps:

- a. **Conduct Soil Tests:** Before planting, conduct a soil test to determine the nutrient levels, including iron. This will help you identify any deficiencies or excesses in advance.
- b. **Adjust pH Levels:** Iron availability is influenced by pH levels. In most soils, iron is best absorbed at pH levels between 5.5 and 6.5. Adjust the pH of the growing medium accordingly using pH adjusters or amendments.
- c. **Select Appropriate Fertilizers:** Choose fertilizers that contain a balanced mix of macronutrients and micronutrients, including iron. Consider using slow-release or controlled-release fertilizers to ensure a steady supply of iron.
- d. **Apply Iron Supplements:** If iron deficiency is detected, apply iron supplements according to the recommended dosage. This can be done through foliar sprays or soil drenches.
- e. **Monitor Plant Health:** Regularly monitor the plants for any signs of nutrient deficiencies or excesses, including iron. Adjust the nutrient schedule as needed to ensure optimal health and growth.

By following these steps and adequately addressing iron-related nutrient issues, you can optimize the growth and yield of your cannabis plants.

In conclusion, iron is an essential micronutrient for cannabis plants, playing a crucial role in various biological processes. Understanding the significance of iron, identifying symptoms of deficiency and excess, exploring different sources of iron, and creating a customized nutrient schedule are key steps towards achieving successful cannabis growth. With this comprehensive knowledge, you will be equipped to ensure optimal iron levels and address any nutrient imbalances, enabling healthy and thriving cannabis plants.