

## About us:

Touba company was established in 2015 with the support of 20 years of research and scientific experience on micronutrient fertilizers and specifically sequestrene chelated iron fertilizer and in 2016 for the first time in Iran, we succeed in acquiring the technology of producing sequestrene chelated iron fertilizer. This company is currently continuing research on the different chelates such as EDHHSAM, EDDHSA, EDDHA, HBED, EDTA, ... and simultaneously is producing a variety of iron chelate fertilizers with a capacity of 3 tons per day.

The other micronutrient fertilizers such as zinc, manganese, copper, magnesium, calcium, mix of all micronutrients and other general and customized fertilizer are also among the products of this company, which are produced and packaged according to customers' orders.

This knowledge-based company is currently proud to work with a group of researchers and graduates of Iran's top universities such as Tehran, Sharif, etc. with a variety of specialties in the fields of agriculture, organic and inorganic chemistry, soil science, etc.

### Honesty and transparency

In all these years, we have tried to appreciate the trust of our customers by producing high-quality products and strictly observing professional ethics

### Human resources

Touba Company always considers the employment of committed and expert personnel, who are mainly elites and graduates of the country's top universities, as one of its main advantages

### Research & Development

our company invests heavily in its research and development every year because of its vision for the future

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## Plant nutrition :

Plants need nutrients for maximum growth and maximum yield. Deficiency of these nutrients will lead to consequences such as incomplete growth, yellowing leaves and reduced yields, all of which reduce crop production and reduce farmer income. The elements needed by the plant are divided into the following three categories:

\* Macro elements (primary) nutrients including :

nitrogen (N), phosphorus (P) and potassium (K)

\* secondary elements nutrients including :

sulfur (S), calcium (Ca), magnesium (Mg)

\* Micronutrients including:

iron(Fe), zinc(Zn), manganese(Mn), copper(Cu), boron(B), molybdenum (Mo), chlorine (Cl), cobalt (Co)

Macro elements are needed in very large amounts while micronutrients are needed in small amounts.

In order for plants to grow normally, there must be a proper balance between all elements.

- **Iron** : Iron is involved in the production of chlorophyll, and iron chlorosis is easily recognized on iron sensitive crops growing on calcareous soils.

- **Zinc** : Zinc is an essential component of various enzyme systems for energy production, protein synthesis, and growth regulation.

- **Manganese** : Manganese is necessary in photosynthesis, nitrogen metabolism and to form other compounds required for plant metabolism.

- **Copper** : Copper is necessary for carbohydrate and nitrogen metabolism, so inadequate copper results in stunting of plants.

- **Boron** : A primary function of boron is related to cell wall formation, so boron-deficient plants may be stunted.

- **Molybdenum** : Molybdenum is involved in enzyme systems relating to nitrogen fixation by bacteria growing symbiotically with legumes.

## Touba complete liquid fertilizer:

Touba complete liquid fertilizer is the most complete product of this company in terms of plant nutrition and also it is very economical and low cost for farmers so that if farmers want to supply the elements in this fertilizer separately, it will cost 2 to 3 times more. Touba liquid complete fertilizer contains all 13 nutrients required by the plant. This fertilizer is a combination of nitrogen; phosphorus, potassium, sulfur, calcium magnesium and micronutrients designed to maximize the quantity and quality of agricultural products.

This product offers a unique formula of combining the elements needed by the plant Using a balanced source of nitrogen and phosphate for easier absorption and higher efficiency of the elements.

While several brands are now producing and offering NPK fertilizers, only this company has been able for the first time in the world to collect all the nutrients needed by the plant in a liquid fertilizer in a stable composition.

N	P	K	S	Ca	Mg
7	2	7	0.7	0.42	0.28
Fe	Zn	Mn	Cu	B	Mo
0.03	0.01	0.01	0.005	0.0025	0.0002



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## Touba micromix:

Touba Micro Mix products are chelated with two bases: EDTA and New EDDHSAM. These products are effective in alleviating all the micronutrients needed by the plant and these fertilizers can be used in farms, gardens, greenhouses and hydroponic cultivation.

### Micro Mix EDTA (Solid)

Fe	Zn	Mn	Cu	B	Mo
6	3	3	1	0.5	0.2

### Micro Mix New EDDHSAM (Liquid)

Fe	Zn	Mn	Cu	B	Mo
3	1	1	0.5	0.25	0.01

These products can be produced and provided in both solid and liquid forms with the highest quality at the request of customers, but economically, farmers and customers are recommended to use the liquid type to supply the micronutrients needed for their farm or product.

Touba micro-mix fertilizer with New EDDHSAM chelating agent provides a mixture of all micronutrients required by the plant. Maximum growth and yield of agriculture as well as activation of enzymatic processes of the plant.

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## Touba iron fertilizer :

Single element iron micronutrient fertilizers are provided in solid form with three chelating agents. These products are recommended for farmers who suffer from yellow leaf disease and iron deficiency in their fields or crops. As mentioned, these products can be provided in various packages according to customers' requests

### Fe - EDDHSAM :

1. Soil pH stability range from 4.5 to 9
2. Quick effect and greenness within 7 days
3. Shelf life of EDDHSAM chelate in soil between 2 to 3 months (shuttle effect).
4. Indigenous formulation based on Iran's climatic conditions and competitive with famous European brands

\*. Fe EDDHSAM iron chelate is presented in two separate formulations, the K-Plus type is potassium enriched and the Plus type is chlorine-free.

### Fe - EDDHSA :

1. Soil pH stability range from 2 to 11
2. Quick effect and greenness within 4 days
3. Shelf life of EDDHSA chelate in soil between 4 to 5 months (shuttle effect).
4. The formulation in accordance with the latest international standards
5. Fe EDDHSA iron chelate is biodegradable and does not contain the toxic substances such as phenol and paracresol.
6. Without plant phytotoxicity
7. ortho - ortho 3.5%

### Fe - EDDHA :

- 1- Soil pH stability range from 2 to 11
- 2- Iron 100% chelated
- 3- high solubility and easy to consume
- 4- Much more effective than conventional iron sources such as sulfate or iron oxide
- 5- Ortho - ortho from 3.5 to 4.8%

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