TJ Micromix is a profit-proven management tool used to ensure the plant availability of secondary and micronutrients. The liquid formulation is a comprehensive, fertilizer mix designed to complement a liquid NPK fertilizer program for optimal plant growth and increased yield.
Micronutrients are Essential for Plant Growth and Development

Micronutrients are not optional for plants, they are essential. Secondary and micronutrients act as catalysts, initiating or accelerating reactions, improving nutrient uptake and utilization.

Today’s plant genetics create a demand for plant-available, comprehensive and uniform ratios of secondary and micronutrients.

Do Soil Tests Tell the Whole Story?

A soil test may suggest there are no micronutrient deficiencies, so growers think they have sufficient amounts of secondary micronutrients and the crop will access them. However, soil tests don’t tell the whole story.

Many soil and environmental factors affect the plant availability of secondary and micronutrients. Soil tests either don’t measure or provide insufficient information about these factors which include soil pH, organic matter content, temperature, soil nutrient interactions, water content and light.

If a plant does not have access to enough micronutrients, it can lead to susceptibility to disease, stunting, reduced root structure and ultimately, reduced yields.

TJ Micromix Ensures Availability of Secondary and Micronutrients

TJ Micromix is a profit-proven management tool used to ensure the plant availability of secondary and micronutrients. The liquid formulation is a comprehensive, plant-available fertilizer mix designed to complement an NPK liquid fertilizer program for optimal plant growth and increased yield.

This synergistic blend of seven essential secondary and micronutrients is 100% EDTA or HEDTA chelated (except boron) for easy mixing, even distribution and consistent, uniform delivery of secondary and micronutrients to each plant.

Consistent, Proven Performance

TJ Micromix is specifically designed for optimal agronomic and economic performance. Its synergistic blend and specific ratios of secondary and micronutrients has been formulated through extensive field research and performance trials by universities, independent consultants and growers.

92% Positive Yield Response
76% Profitable Crop Response

TJ Micromix has proven performance in increasing plant yield. Ongoing research since 1995 (both replicated and side-by-side trials) shows a favorable response on a variety of crops.

Foundational Mix Complements NPK

TJ Micromix provides a foundation for optimal plant growth and efficiency by delivering a comprehensive analysis of seven essential secondary and micronutrients readily available in proper ratios to complement an NPK fertilizer program and maximize yield potential.

Synergistic Mix Maximizes ROI

Nearly 20 years of research and trials has confirmed TJ Micromix creates synergies and/or avoids antagonisms. Essential micronutrients act as catalysts to accelerate internal plant reactions, which improves NPK utilization, thereby maximizing your fertilizer program investment and yield potential.

Availability of Nutrients Across Wide pH

Soil micronutrients will generally become less available as soil pH rises. The micronutrients in TJ Micromix are available under a wide range of soil pH and varying soil conditions.

Easy to Use – Just Mix with NPK

TJ Micromix Liquid can be applied in-furrow, pop-up, or foliar (center pivot injection, ground or aerial) with water or NPK fertilizers.
TJ Micromix Liquid
CORN
CHELATED LIQUID

Guaranteed Analysis
Calcium (Ca) ................................................................. 0.60%
  0.60% ...............Chelated Calcium (Ca)
Magnesium (Mg) .......................................................... 0.25%
  0.25% ...............Chelated Magnesium (Mg)
Boron (B) ................................................................. 0.08%
Copper (Cu) ............................................................... 0.25%
  0.25% ...............Chelated Copper (Cu)
Iron (Fe) ................................................................. 0.50%
  0.50% ...............Chelated Iron (Fe)
Manganese (Mn) .......................................................... 0.42%
  0.42% ...............Chelated Manganese (Mn)
Zinc (Zn) ................................................................. 2.14%
  2.14% ...............Chelated Zinc (Zn)

NUTRIENTS DERIVED FROM THE FOLLOWING SOURCES: CALCIUM EDTA, MAGNESIUM EDTA, SODIUM BORATE, COPPER EDTA, IRON HEDTA, MANGANESE EDTA AND ZINC EDTA.

Guaranteed Analysis
Calcium (Ca) ................................................................. 0.70%
  0.70% ...............Chelated Calcium (Ca)
Magnesium (Mg) .......................................................... 0.30%
  0.30% ...............Chelated Magnesium (Mg)
Boron (B) ................................................................. 0.10%
Copper (Cu) ............................................................... 0.90%
  0.90% ...............Chelated Copper (Cu)
Iron (Fe) ................................................................. 0.60%
  0.60% ...............Chelated Iron (Fe)
Manganese (Mn) .......................................................... 0.50%
  0.50% ...............Chelated Manganese (Mn)
Zinc (Zn) ................................................................. 0.90%
  0.90% ...............Chelated Zinc (Zn)

TOXICITY DERIVED FROM THE FOLLOWING SOURCES: CALCIUM EDTA, MAGNESIUM EDTA, SODIUM BORATE, COPPER EDTA, IRON HEDTA, MANGANESE EDTA AND ZINC EDTA.

INDEPENDENT REPLICATED CORN FIELD TRIALS.
177 TOTAL REPLICATIONS.
LOCATIONS: SD, ND, NE. 1999-2010.

INDEPENDENT REPLICATED CORN FIELD TRIALS.
53 TOTAL REPLICATIONS.

ON CORN
1.5 Quarts/Acre at Planting
INDEPENDENT REPLICATED CORN FIELD TRIALS.
41 TOTAL TRIALS.
177 TOTAL REPLICATIONS.
LOCATIONS: SD, ND, NE. 1999-2010.

ON WINTER WHEAT
1.5 Quarts/Acre at Planting
INDEPENDENT REPLICATED HARD WINTER WHEAT FIELD TRIALS.
18 TOTAL TRIALS.
177 TOTAL REPLICATIONS.

ON SPRING WHEAT
1.5 Quarts/Acre at Planting
INDEPENDENT REPLICATED HARD SPRING WHEAT FIELD TRIALS.
4 TOTAL TRIALS.
10 TOTAL REPLICATIONS.

ON SILAGE CORN
1.5 Quarts/Acre at Planting
INDEPENDENT REPLICATED CORN FIELD TRIALS.
17 TOTAL TRIALS.
53 TOTAL REPLICATIONS.
**TJ Micromix Liquid**

**ALFALFA/ SUGAR BEET CHELATED LIQUID**

**Guaranteed Analysis**

- Calcium (Ca) ........................................... 0.70%
- Magnesium (Mg) ..................................... 0.30%
- Boron (B) .................................................. 0.60%
- Copper (Cu) ............................................. 0.30%
- Iron (Fe) .................................................... 0.60%
- Manganese (Mn) ...................................... 0.50%
- Zinc (Zn) .................................................. 0.90%

Nutrients derived from the following sources: Calcium EDTA, Magnesium EDTA, Sodium Borate, Copper EDTA, Iron HEDTA, Manganese EDTA and Zinc EDTA.

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**ON ALFALFA**

- **Yield Increase**
  - +11%
  - Yield: 6.3

1 Quart/Acre Before Second and Third Cuttings

**INDEPENDENT ALFALFA FIELD TRIALS.**

**VARIETY:** REA401T

**WILLISTON, ND. 2005.**

**ON SUGAR BEETS**

- **Average Increase**
  - +48%
  - Average: 26.76

2 Quarts/Acre In-Furrow

**INDEPENDENT SUGAR BEET FIELD TRIALS.**

**TERRY, NE. 1996.**

**SYDNEY, MT. 1999.**

**ON SOYBEANS**

- **Bu/A Increase**
  - +3
  - Bu/A: 48

1.5 Quarts/Acre Banded

**INDEPENDENT REPICATED SOYBEAN FIELD TRIALS.**

**20 TOTAL TRIALS.**

**LOCATIONS:** NE, SD. 2001-2009

**ON SUNFLOWERS**

- **Lbs/A Increase**
  - +174
  - Lbs/A: 2282.67

1.5 Quarts/Acre at Planting

**INDEPENDENT REPICATED SUNFLOWER FIELD TRIALS.**

**20 TOTAL TRIALS.**

**LOCATIONS:** NE, SD. 1999-2006

**CANOLA/ SOYBEAN/ SUNFLOWER CHELATED LIQUID**

**Guaranteed Analysis**

- Calcium (Ca) ........................................... 0.70%
- Magnesium (Mg) ..................................... 0.30%
- Boron (B) .................................................. 0.10%
- Copper (Cu) ............................................. 0.30%
- Iron (Fe) .................................................... 0.50%
- Manganese (Mn) ...................................... 0.50%
- Zinc (Zn) .................................................. 0.90%

Nutrients derived from the following sources: Calcium EDTA, Magnesium EDTA, Sodium Borate, Copper EDTA, Iron HEDTA, Manganese EDTA and Zinc EDTA.
Calcium, Magnesium, Copper, Iron, Manganese and Zinc are important secondary and micronutrients which are positively charged metal ions.

These metal ions need chelation to prevent degradation in the soil and maintain availability for absorption by the plant roots.

What is a chelate?
The word “chelate” is from the Greek chelè meaning claw. The positively charged ions are reacted with a compound to form a molecule with a negative charge. This means that a chelate keeps a micronutrient tightly in its grip, protecting it from reacting with negatively charged soil particles, preventing “tie-up” and unavailability.

With this protection, the micronutrient maintains its integrity and cannot react with anions like phosphate. Chelated micronutrients are the preferred way to supply sufficient micronutrients to the crop via the root system. They are rapidly available to the plant and have a remarkable residual effect during the growing season as well.

* Since Boron is negatively charged, it cannot be chelated and is not subject to “tie-up”.

EDTA and HEDTA are Strongest, Most Effective Chelates in Agriculture
TJ Micromix utilizes an ethylene diamine tetra acetic acid (EDTA) and N-(hydroxyethyl)-ethylenediaminetriacetic acid (HEDTA) chelates. Metal chelates derived from EDTA (Ca, Mg, Cu, Mn, Zn) and from HEDTA (Fe) are the products of choice under soil conditions limiting micronutrient availability.

EDTA and HEDTA chelates are stronger than other options because they:

• Are nature's available form allowing for easy absorption.
• Promote transport in leaves after absorption.
• Release in the plant cell rather than the soil.
• Have high solubility and low sensitivity to soil conditions including organic matter, temperature and pH levels.

TJ Micromix with Chelated Micronutrients is:

• Stable and compatible with NPK, water, glyphosate and phosphate-containing fertilizers.
• Fully available for absorption by the root and utilization by the plant.
• Effective in variable pH or temperatures.
• Highly efficient with low use rates.
Essential Secondary and Micronutrient Functions:

**Calcium (Ca)**
Influences intake of other nutrients; increases calcium content of food and feed crops and nodulation in legumes; encourages grain and seed production; improves general plant vigor and stiffness of stalks, improves cell wall structure; promotes early root formulation and growth.

**Magnesium (Mg)**
Regulates the uptake of nutrients; acts as carrier of phosphorus in the plant; is essential to root formation and photosynthesis; center of chlorophyll molecule.

**Boron (B)**
Influences frost resistance, sugar levels, vitamin C, and calcium utilization; strengthens cell walls; essential in the formation of awns, silks and pollen grains.

**Copper (Cu)**
Strengthens cell walls and prevents wilting; necessary for carbohydrate, nitrogen metabolism; is key to many enzymatic processes promoting growth strength, concentration of starch (ethanol); deficiency will reduce yield, even when mild; used as reaction catalyst.

**Iron (Fe)**
Required for chlorophyll in plant cells; activates biochemical processes such as respiration, photosynthesis and synthetic nitrogen fixation.

**Manganese (Mn)**
Is necessary in photosynthesis, nitrogen metabolism and plant metabolism; activates enzymes in plant growth; assists iron in chlorophyll formation.

**Zinc (Zn)**
Carries phosphorous; is necessary in enzyme and hormone development; required for seed formation and maturity.

Dry Formulations Also Available
TJ Micromix is also available in a dry granule formulation, with eight essential secondary and micronutrients, for select crops.

For more information go to [www.tjmicromix.com](http://www.tjmicromix.com).

About TJ Technologies, Inc.
TJ Technologies, Inc. is an agricultural company, headquartered in Watertown, S.D. dedicated to developing and providing plant-focused microbial technologies and micronutrient products that are designed to consistently increase plant yield and maximize the soil's productivity for optimal efficiency and profitability for growers.

Utilizing the latest in microbial actives, products are developed through extensive research by our internal team, then tested and performance confirmed by universities, seed companies, private research professionals and grower cooperators.

Founded in 1978, our mission is to gain a more complete understanding of the creation in which we live, through systematic, scientific research, to positively influence the profitability and sustainability of production agriculture through innovative and consistently effective products.

For more information go to: [www.tjtechnologiesinc.com](http://www.tjtechnologiesinc.com)

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Secondary nutrient minimum guarantees vary state by state. To ensure proper labeling for your state please go to: [www.tjmicromix.com](http://www.tjmicromix.com).

Information regarding the contents and levels of metals in this product is available at: [www.aapfco.org/metals.htm](http://www.aapfco.org/metals.htm).

**WARNING:** Some crops may be injured by application of boron. This product contains added boron and must be used only according to the manufacturer’s directions. Use of this fertilizer on any crop(s) other than those recommended may result in serious injury to the crop. TJ Micromix’s unique formulation of ingredients (including boron) accommodates safe in-furrow application at label rates. Soybeans require standard seed safety precautions. Do not mix TJ Micromix Liquid with methylated seed oil (MSO), crop oil concentrate (COC) or oil-based pesticide for foliar application, as it MAY RESULT IN LEAF BURN.