



# Company Profile

SODOUR AHRAR SHARGH KNOWLEDGE-BASED COMPANY

Sodour Ahrar Sharqh



- **Company Name: Sodour Ahrar Shargh Knowledge-based Company (Ltd Co.)**
- **Date of Establishment: 2003**
- **Address: Flat 2, No.1, Afshin Alley, Abdollah Zade Ave., Keshavarz Blvd., Tehran, Iran**
- **Tel / Fax: 00982188992123**
- **Website: [en.khazra.ir](http://en.khazra.ir)**
- **E-mail: [info@khazra.ir](mailto:info@khazra.ir)**

Sodour Ahrar Shargh



# 1. SASH Co. History

Sodour Ahrar Sharqah



# SASh Co. History

- ▶ Sodour Ahrar Shargh knowledge-based Company (SASh Co.) was established in Tehran in 2003 aiming for the advanced technologies (high tech). In 2006, SASh Co. succeeded in attaining “Nanotechnology” and as a result endorsed its presence in this strategic field. In 2010, this company was chosen as “the Distinguished Technology Contributor Company of the Year” by Iran Nanotechnology Initiative Council (INIC) for introducing the new generation of fertilizers.
- ▶ In 2012, SASh Co., the owner of “advanced Chelate Compounds technology” and the sole producer of designed compounds based on this technology, i.e. chelates and nano chelates, was granted a patent again by the United States Patent and Trademark Office (USPTO) for its unique technology. In the same year, SASh Co. also filed this technology in the European Patent Office (EPO). The aforementioned technology is presented in the name of the company’s CEO and chairman of the board as “Chelate Compounds”.
- ▶ SASh Co.’s parent technology has the capability to design and synthesize diverse structures and nano structures suitable for extensive applications in areas such as livestock and poultry, aquaculture, petrochemicals, materials, polymer and plastic, agriculture, electronics, construction industries, and various medical fields.

# SASh Co. History





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Refine search → Results → EP2444096 (A1)

EP2444096 (A1)

**Bibliographic data**

Description

Claims

Mosaics

Original document

Cited documents

Citing documents

INPADOC legal status

INPADOC patent family

Quick help

- What does A1, A2, A3 and B stand for after a European publication number?
- What happens if I click on "In my patents list"?
- What happens if I click on the "Register" button?
- Why are some sidebar options deactivated for certain documents?
- How can I bookmark this page?
- Why does a list of documents with the heading "Also published as" sometimes appear, and what are these documents?
- Why do I sometimes find the abstract of a corresponding document?
- What happens if I click on the red "patent translate" button?

## Bibliographic data: EP2444096 (A1) — 2012-04-25

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**Chelate Compounds**

Page bookmark: [EP2444096 \(A1\) - Chelate Compounds](#)

Inventor(s): NAZARAN MOHAMMAD HASSAN [IR] ±

Applicant(s): NAZARAN MOHAMMAD HASSAN [IR] ±

Classification: - international: **A61K33/26; C05G3/00**  
 - cooperative: **C05D3/00; C05D9/02**

Application number: EP20110185875 20111020

Priority number(s): **US20100910799 20101023**

Also published as: **US2012100372 (A1) US8288587 (B2)**

Abstract of EP2444096 (A1)

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100

Receiving a Nitrogen Source 102




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## Patents

### Chelate Compounds

EP 2444096 A1

#### ABSTRACT

A method for producing chelate compounds is disclosed. A nitrogen source, an acidic source, and a first element source including sodium, chlorine, potassium, and/or lithium are received in a mixture. A second element source and water can also be received. The chelate compound can be optionally purified.

<b>Publication number</b>	EP2444096 A1
<b>Publication type</b>	Application
<b>Application number</b>	EP20110185875
<b>Publication date</b>	Apr 25, 2012
<b>Filing date</b>	Oct 20, 2011
<b>Priority date</b> ⓘ	Oct 23, 2010
<b>Also published as</b>	US8288587, US20120100372
<b>Inventors</b>	Mohammad Hassan Nazaran
<b>Applicant</b>	Mohammad Hassan Nazaran
<b>Export Citation</b>	BiBTeX, EndNote, RefMan

Patent Citations (2), Non-Patent Citations (2), Classifications (4), Legal Events (3)

**External Links:** Espacenet, EP Register

#### IMAGES (5)



Search Report (1)



Search Report (2)

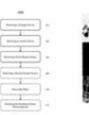


Fig. 1

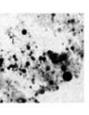


Fig. 2

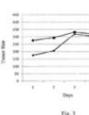


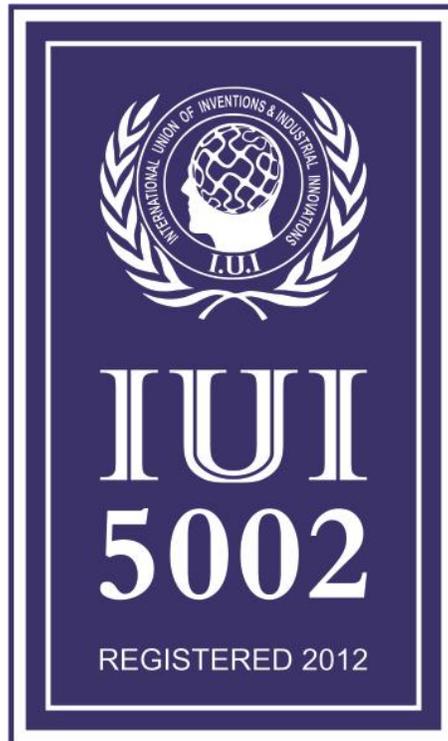
Fig. 3



# SASh Co. History

- ▶ In 2012, SASh Co. became an official member of the Integrated Nano-Science & Commodity Exchange (INSCX), located in the UK, for introducing Khazra Chelated Nano fertilizers. Only one year later in 2013 and following the news release of this advancement in technology on FAO official website, SASh Co. was chosen as “The Distinguished Iranian Company in Nanotechnology” by the International Union of Inventions and Industrial Innovations (IUI) in Switzerland.
- ▶ In 2016, following an official invitation from American Chemical Society (ACS), as the world's largest and oldest scientific society, Mr. Mohammad Hassan Nazaran, the CEO and chairman of the board of SASh Co., became a member of ACS. In 2017, he won Iran Inventions Grand Prize in chemistry at its first international festival.
- ▶ At present, in order to accomplish the company’s strategic goals, SASh Co. has focused its attention on production of unique structures and nano structures by relying on “advanced Chelate Compounds technology” (chelating and nanochelating) which has vital impacts on different aspects of human life.

# SASh Co. History



Selected as the Distinguished Iranian Nanotechnology Contributor Company of the Year by the International Union of Inventions (IUI) in Switzerland in 2013



# SASh Co. History

American  
Chemical Society  
Non-profit organization



Mr. Mohammad Hassan Nazaran; the CEO, Chairman of the Board of SASh Co. and an Official Member of ACS



## 2. Mission and Security, Health and Environmental Policies of SASh Co.

Sodouk Almar Sharqah

# Mission and Security, Health and Environmental Policies of SASH Co.



SASH Co., as the sole producer of different kinds of products with the help of “advanced Chelate Compounds technology”, has a mission to prepare a better, longer, healthier, and more enjoyable life for all people around the world by using this technology and other scientific methods.

In this regard, SASH Co. has highlighted its personnel’s health and safety, equipment, and protection of the environment in its activities and has applied Information Management System (IMS) based on the standard of Quality Management System ISO 9001: 2008, Environmental Management System ISO 14001: 2004, and Occupational Health and Safety Assessment Series OHSAS 18001: 2007, and has considered the following principles to meet the fundamentals of these standards:

# Mission and Security, Health and Environmental Policies of SASH Co.



1. Increasing customer satisfaction by identifying and meeting the needs of the customers, promoting the quality level, and diversifying into manufacturing products
2. Becoming the leader of manufactured products using its chelated and nano chelated structures in medical and pharmaceutical fields, food, mining, fertilizers and pesticides, livestock and poultry and aquatic animals, food supplements, petrochemicals, electronics, and construction
3. Assisting the production of healthy and high quality food at international level
4. Attracting production-related ideas by continuous collaboration with professors and students from top universities all over the world
5. Organizing, reviewing, and improving current procedures continuously in order to improve the performance and reduce the expenses of the company
6. Strengthening the company's infrastructure to produce diverse and world-class products
7. Preventing injuries, reducing occupational diseases, and also complying with relevant occupational health and safety laws and regulations
8. Preventing environmental pollution, controlling and reducing environmental pollutants, optimizing the resources, materials, and energy use, and complying with relevant environmental laws and regulations

The senior management of the company, while committing to complying with all relevant legal requirements, realizing the above objectives, and reviewing the procedures periodically to improve the effectiveness of the above-mentioned systems, makes this policy available to all employees, suppliers, and stakeholders, and expects to achieve those objectives with their mutual understanding and cooperation.



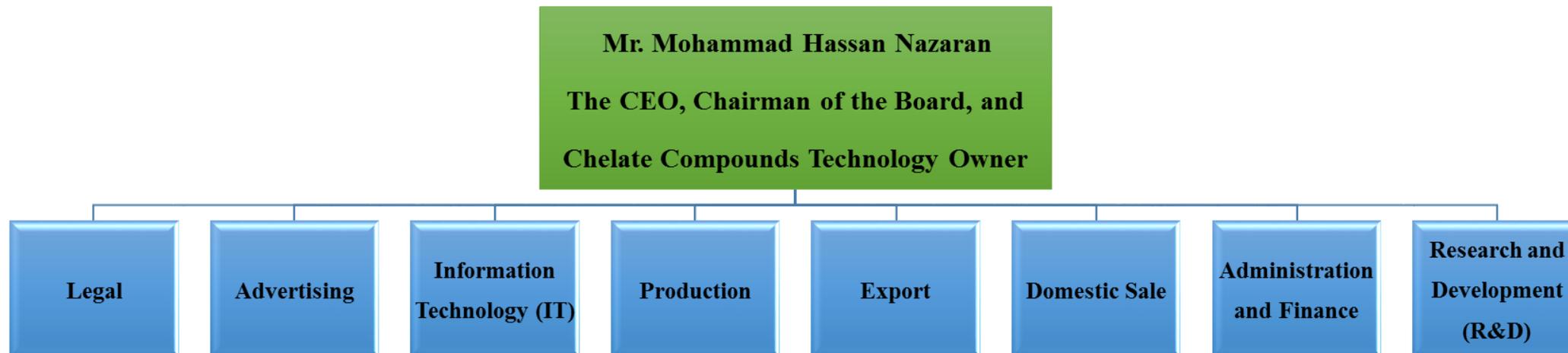
# 3. Business Departments





# Business Departments

SASh Co. currently has 50 personnel working in the following 8 departments, and Mr. Mohammad Hassan Nazaran, as the owner of the company, the CEO, and chairman of the board, leads the company:





**SASh Co. has already mass-produced two categories of its products using this technology.**

- **First category: chelated nano fertilizers and chelated nano pest control fertilizers with the registered trademark of “Khazra” as the new generation of fertilizers.**
- **Second category: chelated mineral supplements with the registered trademark of “Bonza” as the new generation of livestock, poultry, and aquatic species supplements.**



# 4. Company Products Overview

Sodouq Ahram Sharqah



# Company Products Overview

**A) Khazra Chelated Nano Fertilizers: New Generation of Fertilizers**

**KHAZRA**  <sup>®</sup>



# Company Products Overview

## A) Khazra Chelated Nano Fertilizers: New Generation of Fertilizers

Over 200,000,000 tons of various fertilizers are consumed annually in agricultural lands around the world. It should be noted that the annual consumption of million tons of chemical fertilizers in agricultural lands can cause the following due to the type, structure, and low absorption of these fertilizers:

- damaging the soil texture
- soil fertility loss
- polluting groundwater and soil by nitrate and heavy metals
- plants low resistance against temperature stress
- quality and quantity reduction of crops
- plants low resistance against pests
- increased need for pesticides
- and consequently producing crops contaminated with pesticides residues, nitrate, and heavy metals



The result will be a decrease in community health and emergence of a variety of diseases. Despite their relative superiority over chemical fertilizers, the conventional chelated fertilizers, such as EDDHA and EDTA (which can only be useful in delivering micronutrients like iron and zinc), almost suffer similar limitations.



# Company Products Overview

## A) Khazra Chelated Nano Fertilizers: New Generation of Fertilizers

“Advanced Chelate Compounds technology” is a great revolution in chemistry to synthesize structures and nano structures in different fields of science including agriculture, livestock and poultry, medicine, electronics, petrochemicals and so on. In this technology, chelates and nano chelates, having much higher bioavailability and efficiency than previous structures, are produced using self-assembly method. Based on this technology, Khazra Chelated Nano fertilizers as the new generation of fertilizers are produced. Due to the unique structure of Khazra Chelated Nano fertilizers, their absorption rate by the root and leaves of the plant is a lot more than chemical fertilizers and also common chelated fertilizers such as EDDHA and EDTA.





# Company Products Overview

## A) Khazra Chelated Nano Fertilizers: New Generation of Fertilizers



Khazra Chelated Nano fertilizers do not suffer the limitations and problems caused by chemical and common chelated fertilizers, yet they cause significant quality and quantity increase in agricultural crops without the negative effects of environmental pollutants.

Khazra Chelated Nano fertilizers are the new generation of fertilizers whose application in orchards, farms, and greenhouses has led to 20-200% yield increase, significant increase in quality, and higher resistance to pests and diseases.



# Company Products Overview

## **A) Khazra Chelated Nano Fertilizers: New Generation of Fertilizers**

In addition to their various advantages and positive properties, these fertilizers do not have any side effects and are completely safe. Different studies have revealed and proven Khazra Chelated Nano fertilizers safety and effectiveness. Some of these results were accepted at “The 4th International Nanotechnology Conference” in Thailand in the form of two abstracts in 2014.



# Company Products Overview



Faculty of Science, Mahidol University  
272 Rama VI Road, Ratchathewi District,  
Bangkok 10400, Thailand

29 August 2014

Dear Mr. Mohammad Hassan Nazam,

Thank you for submitting an abstract for the 4<sup>th</sup> Thailand International Nanotechnology Conference (NanoThailand 2014). On behalf of the organizing committee under Nanotechnology Association of Thailand and Mahidol University, it's our great pleasure to inform you that your paper with the title of

**Nano Iron Chelate (khazra), New Generation of Fertilizer and its Safety Aspects**

is accepted to be presented as **Poster Presenter**

in the NanoThailand 2014 which will be on 26 – 28 November, 2014 at Thailand Science Park Convention Center, Pathumthani, Thailand. The theme is "Nanotechnology for better living". The objectives are to apply nanotechnology in various fields for better living, to exchange knowledge to further advance technology areas, and to exhibit the latest innovations. The details of the conference will be updated at our website : <http://www.nano-thailand.com/2014>

The accepted and presented abstract will be published in the NanoThailand 2014 Conference Proceedings. The full papers are invited to be published in the Advanced Materials Research : [www.scientific.net](http://www.scientific.net)

We look forward to welcoming you in the conference.

Warmest regards,

(Assistant Professor Dr. Toemsak Srikuhinia)  
Chairman of Scientific Committees of the NanoThailand 2014 Conference



Faculty of Science, Mahidol University  
272 Rama VI Road, Ratchathewi District,  
Bangkok 10400, Thailand

29 August 2014

Dear Author Somayeh Kalamaly,

Thank you for submitting an abstract for the 4<sup>th</sup> Thailand International Nanotechnology Conference (NanoThailand 2014). On behalf of the organizing committee under Nanotechnology Association of Thailand and Mahidol University, it's our great pleasure to inform you that your paper with the title of

**Nanochelating technology presents safe Nano chelate fertilizers (Khazra)**

is accepted to be presented as **Poster Presenter**

in the NanoThailand 2014 which will be on 26 – 28 November, 2014 at Thailand Science Park Convention Center, Pathumthani, Thailand. The theme is "Nanotechnology for better living". The objectives are to apply nanotechnology in various fields for better living, to exchange knowledge to further advance technology areas, and to exhibit the latest innovations. The details of the conference will be updated at our website : <http://www.nano-thailand.com/2014>

The accepted and presented abstract will be published in the NanoThailand 2014 Conference Proceedings. The full papers are invited to be published in the Advanced Materials Research : [www.scientific.net](http://www.scientific.net)

We look forward to welcoming you in the conference.

Warmest regards,

(Assistant Professor Dr. Toemsak Srikuhinia)  
Chairman of Scientific Committees of the NanoThailand 2014 Conference

**Acceptance Certificates of Two Abstracts on Khazra Chelated Nano Fertilizers Safety in The 4th International Nanotechnology Conference in Thailand**



# Company Products Overview

## A) Khazra Chelated Nano Fertilizers: New Generation of Fertilizers

The results of some studies on effects of Khazra Chelated Nano fertilizers can be seen in the pictures below.

# Company Products Overview



Using Khazra Nano Chelated Iron fertilizer on a rice farm resulted in

- 18-33% increase in 1000 grains weight, tiller's number, and biological yield
- 33.7% increase in husk yield
- 30% increase in absorption of macronutrients (nitrogen, phosphorous, and potassium)

Rice Research Institute of Iran



Using Khazra Chelated Nano fertilizers in an apple orchard resulted in:

- 20% fruit weight increase
- 47% increase in fruit nutrients content (Bio fortification)
- Shelf-life increase

in comparison with apple trees fed by Yara fertilizers.  
Deputy of Research and Technology - Islamic Azad University of Mahabod



Using Khazra Chelated Nano fertilizers in hydroponic greenhouses of tomato and cucumber resulted in 100% and 200% yield increase respectively, compared to bushes fed by Yara fertilizers, while the concentration of Khazra Chelated Nano fertilizers was only half the concentration of Yara fertilizers.  
Islamic Azad University of Mahabod

# Company Products Overview

**Comparison between Khazra Iron chelate Nano fertilizer and Swiss made Iron chelate Sequestrene 138**  
(a report by Tehran University)

\*\*\*\*\*  
Islamic Republic of Iran

Tehran University emblem  
Science Department

In His Almighty name

Date: 28 /4/2008

Honourable Dr. Sayed Ahmad Sadat Nouri,  
Respected Lecturer of Agriculture and Plant improvement,  
AbouReihan Dept., Tehran University

Subject: Final opinion regarding the tested Iranian fertilizer sample

Salaam and greetings,

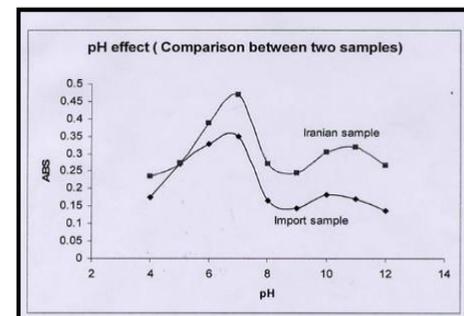
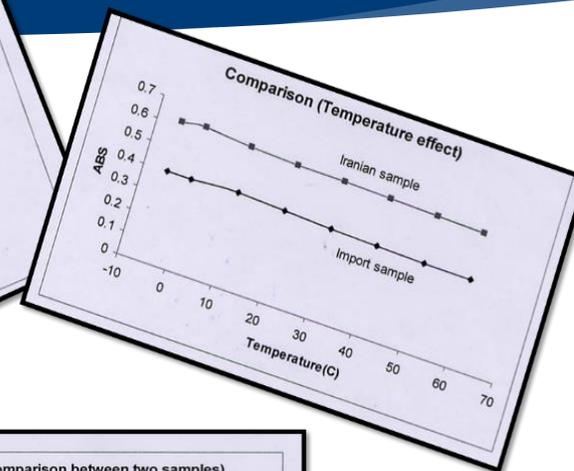
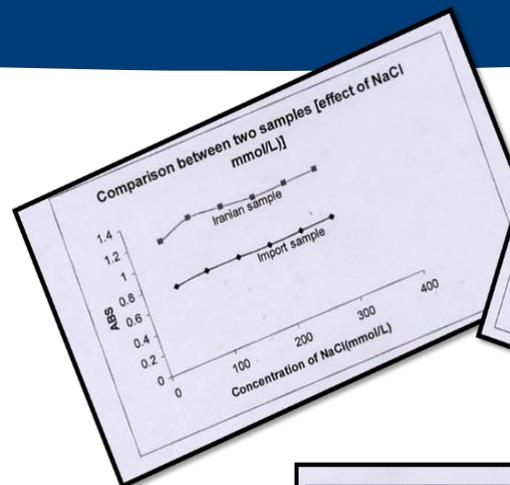
Following your request to compare two fertilizers; Iranian made Khazra Iron chelate produced by Sodour Ahrar Sharh Company from one hand, and the imported fertilizer by the name of Sequestrene 138 from the other hand; and after nearly two years of thorough testing in this laboratory, the results are presented as per detailed attachment.

Ultimately in conclusion, in majority of cases the Iranian fertilizer has definite superior quality over the above named imported fertilizer and only in a few the results confirmed a similar quality. Overall, the Iranian Khazra (Iron chelate) fertilizer sample is definitely superior to the mentioned imported sample in this laboratory's opinion.

With Respect and appreciation,  
Mohammad Reza Gahjali  
Chairman,  
Supreme centre of Electro-chemistry  
Signed and sealed

*Dr. S.A. Sadat Nouri*

Address: POBox 14155-6455, Science Department, Tehran University Tel: 61112464 Fax: 66405141



A Comparison Between Khazra Nano Chelated Iron Fertilizer and Sequestrene 138 Chelated Iron Fertilizer Conducted at University of Tehran – College of Science



# Company Products Overview

In the name of the Almighty

Date: 13.12.2005  
Number: 2970/260

Ministry of Agricultural Jihad  
Agricultural Research and Education Organization  
National Pistachio Research Institute



**Respected Sodoor Ahrar Shargh Company**  
With greetings,  
Regarding the contract in between in respect of evaluation of the effect of Khazra iron chelate fertilizer on pistachio trees, in the form of solution spraying and soil use, the results acquired from the evaluations of the first year are being declared as follow

1. Application of Khazra iron chelate fertilizer as 1 in 1000 solution spraying and 20 kg per hectare soil use caused a 3.5 fold increase in photosynthesis and up to 4 folds of chlorophyll amounts and can remove chlorosis of leaves due to iron deficiency.
2. Leaves surface area showed a 70 percent increase and small leaves caused from iron deficiency was removed.
3. The amount of iron in the leaves was increased up to 2 folds.
4. The amount of calcium in the leaves was also increased in some cases.
5. The quantity of fruits was not assessable due to cold bitten gardens being evaluated.
6. The effects of iron chelate fertilizer on qualitative properties of fruits like carbohydrates and fat contents and nutrient elements in fruits are being evaluated and the results will be reported later on.
7. Evaluation of the effect of iron chelate fertilizer on aflatoxin amounts is also in trial stage and will be stated at a later date.

Signed:  
**Amanollah Javanshah**



Chairman of  
National Pistachio Research Institute

Address:  
Raftazan, Post Box: 77175/435  
Tel: 4225204 - 7  
Fax: 4225208  
Email: ipri@pri.ir

## The Results of Using Khazra Nano Chelated Iron Fertilizer in Pistachio Trees by National Pistachio Research Center



## TEST FOLLOW-UP

### Test in Flowers: *Chrysanthemum*



APPLICATION 1: DAY 8  
Average height of plants: 7,3 cm

APPLICATION 5: DAY 28  
Average height of plants: 19 cm

APPLICATION 12: DAY 61  
Average height of plants: 95 cm



The two treatments at day 61 (week 9), have the same size observed in the treatment with nano chelateds khazra greater leaf area, thicker stems and a greater greenery.

TREATMENT 1 : Fertilización Conventional

TREATMENT 2: NANO CHELATED KHAZRA

### TREATMENT 2 : NANO CHELATED KHAZRA

TREATMENT SPECIFICATIONS  
 AREA : 26.5m<sup>2</sup> (Square meters).  
 DURATION OF THE CYCLE OF THE CULTIVATION: 90 Days.  
 APPLICATION TIME: 61 days (Up to when de plants were more than 90 cm)  
 FREQUENCY OF APPLICATIONS: Every 5 days.  
 NUMBER OF APPLICATIONS: 12  
 TYPE OF FERTILIZATION: 7 foliar applications and 5 applications to the soil.  
 PRODUCTS AND AMOUNT :

Nano Chelated Khazra	Amounts grams/c <sup>2</sup> x 12 - 20 liters/ water
Nano Chelated Nitrogeno	56,6
Nano Chelated Potassium	64,4
Nano Chelated NPK 20/20/20	16
Nano Chelated Micronutrients	6,5
Nano Chelated Magnesium	6,5
Total products/ grams per each application from 1 to 11:	150
Total products/ grams application No.12. Without Nitrogen	420
Number of Applications :	12
<b>TOTAL GRAMS APPLIED PER 26,5 M<sup>2</sup> PER CYCLE (DAY 61):</b>	<b>2.070</b>

### TEST IN FLOWERS WITH NANO CHELATED KHAZRA, MUNICIPALITY OF CHIA, CUNDINAMARCA, COLOMBIA

#### TREATMENT 1 : CONVENTIONAL FERTILIZATION

TREATMENT SPECIFICATIONS  
 AREA: 26.5m<sup>2</sup> (Square meters).  
 DURATION OF THE CYCLE OF THE CULTIVATION: 90 Days.  
 APPLICATION TIME: 61 days (Up to when de plants were more than 90 cm)  
 FREQUENCY OF APPLICATIONS: 1 - 2 a day.  
 NUMBER OF APPLICATIONS: 118  
 TYPE OF FERTILIZATION: Fertigation and foliar.  
 PRODUCTS AND AMOUNTS:

Products : Basic Formula	Amount of grams x 500 liters/water
Calcium Nitrate	580
Potassium Nitrate	405
Magnesium sulphate	7,5
Urea Phosphate	105
EDTA Mn - magnesium	15,6
EDTA Fe - Iron	6,5
EDTA Cu - Cooper	5
EDTA Zn - Zinc	7,5
Boron	3,6
Ammonium molybdate	0,135
Total grams per each application:	1.196
Number of Application:	112
Amount applied in 112 aplicacion (grams):	163856
Products : Additionals	Amount of grams x 500 liters/water
Calcium Nitrate	4299
Potassium Nitrate	2126
Magnesium sulphate	651
Urea Phosphate	488
Manganese	52
EDTA Fe - Iron	39
EDTA Cu - Coopre	26
EDTA Zn - Zinc	11
Boron	11
Ammonium molybdate	3,3
Total grams per each additional application:	7.699
Number of Additionals applications:	6
Total grams per total of Additionals applications:	46.195
<b>TOTAL GRAMS APPLIED PER 26,5 M<sup>2</sup> PER CYCLE (DAY 61):</b>	<b>210.000</b>

Effects of Khazra Chelated Nano Fertilizers in Municipality of Chia, Cundinamarca Department, Colombia:  
 Using Khazra Chelated Nano Fertilizers for Ornamental Flowers Resulted in Significant Quality Increase in Comparison with Those Fed with Chemical Fertilizers, While the Dosage of Khazra Fertilizers Was Less than 1/100 Compared to That of Chemical Fertilizers



# Company Products Overview

## A) Khazra Chelated Nano Fertilizers: New Generation of Fertilizers

The title of five articles (out of more than dozens) on effects of Khazra Chelated Nano fertilizers are as follows:

1-Effects of slow-release fertilizers on nitrate leaching, its distribution in soil profile, N-use efficiency, and yield in potato crop

2-Effects of Nano-Potassium and Nano-Calcium Chelated Fertilizers on Qualitative and Quantitative Characteristics of Ocimum basilicum

3-Effect of iron nano chelated fertilizers foliar application on three wheat cultivars in Khorramabad climatic conditions

4-Effect of Different Levels of Fertilizer Nano\_Iron Chelates on Growth and Yield Characteristics of Two Varieties of Spinach (Spinacia oleracea L.):Varamin 88 and Viroflay

5- The effect of nanofertilizers on nitrate leaching and its distribution in soil profile with an emphasis on potato yield



# Company Products Overview

## Khazra Chelated Nano Fertilizers Properties

- Structure Stability Against Environmental Physicochemical Changes
- High Percentage of Chelated Elements
- Applicable and Absorbable Through both Foliar Spraying and Soil Application
- The First Non-metal Chelated Fertilizers in the World
- 100% Purity in Mass Production Scale
- Great Efficiency Through Foliar Spraying
- Utilizing Advantages Caused by Nano Scale (Quantum Physics Properties)
- Having an Organic Synthetic Structure

**KHAZRA**® 

# Company Products Overview

## Khazra Chelated Nano Fertilizers Effects

- Without Causing Soil Salinity
- Without Causing Environmental Pollution (Nitrates and Heavy Metals)
- Agricultural Yield Increase (20-200%)
- Increased Resistance Against Stresses (Temperature, Soil Salinity, etc.)
- Increased Resistance Against Diseases and Pests:
  - Reduced Need for Pesticides
  - Producing Healthy Crops
- Increased Durability (Warehousing) Period of Agricultural Crops
- Crops Bio Fortification:
  - Protein Increase in Crops
  - Crops Enrichment with Micro and Macronutrients
  - Increased Secondary Metabolites
- Increased Quality in Agricultural Crops:
  - Size, Form, and Quality Improvement
  - Scent and Taste Improvement





# Company Products Overview

## A) Khazra Chelated Nano Fertilizers: New Generation of Fertilizers

### Types of Khazra Chelated Nano Fertilizers;

- **Khazra Chelated Nano Microelements Fertilizers:** Khazra Nano Chelated Iron, Khazra Nano Chelated Zinc, Khazra Nano Chelated Boron, Khazra Nano Chelated Manganese, Khazra Nano Chelated Molybdenum, Khazra Nano Chelated Complete Micro, and Khazra Nano Chelated Green Space Specific
- **Khazra Chelated Nano Macroelements Fertilizers:** Khazra Nano Chelated Nitrogen, Khazra Nano Chelated Potassium, Khazra Nano Chelated Phosphorous, Khazra Nano Chelated NPK 20-20-20, and Khazra Nano Chelated NPK 12-12-36
- **Khazra Chelated Nano Secondary Elements Fertilizers:** Khazra Nano Chelated Calcium and Khazra Nano Chelated Magnesium
- **Khazra Chelated Nano Micro and Macroelements Fertilizers:** Khazra Nano Chelated Super
- **Khazra Chelated Nano Pest Control Fertilizers:** Khazra Nano Chelated Copper and Khazra Nano Chelated Silicon



Nitrogen



Potassium



Phosphorus



NPK 20-20-20



NPK 12-12-36

### Khazra Chelated Nano Macronutrient Fertilizers



Zinc



Manganese



Boron



Molybdenum



Complete Micro



9% Iron



7% Iron



GreenSpace Specific

### Khazra Chelated Nano Micronutrient Fertilizers



Copper



Silicon Fertilizer



Calcium



Magnesium

### Khazra Chelated Nano Pest Control Fertilizers

### Khazra Chelated Nano Secondary Nutrients Fertilizers



### Khazra Chelated Nano Complete Micro and Macroelements Fertilizers



# Company Products Overview

Some Videos on Effects of Khazra Chelated  
Nano Fertilizers in Gardens, Farms, and  
Greenhouses

**1.Apple**  
<https://www.aparat.com/v/NBRmU>

**2.Wheat**  
<https://www.aparat.com/v/iHrt2>

**3.Alfalfa**  
<https://www.aparat.com/v/08ubW>

**4.Grapes-1**  
<https://www.aparat.com/v/O4Pp8>

**5.Grapes-2**  
<https://www.aparat.com/v/xo0Nv>

**6.Rice**  
<https://www.aparat.com/v/8yXoB>

**7.Corn**  
<https://www.aparat.com/v/67rSJ>

**8.Potato**  
<https://www.aparat.com/v/ZXjcz>

**9.Barley**  
<https://www.aparat.com/v/rJyRq>

**10.Greenhouse Cucumber**  
<https://www.aparat.com/v/4HdRI>

**11.Anthurium Greenhouse (Hydroponic)**  
<https://www.aparat.com/v/fLTN8>

**12.Orange**  
<https://www.aparat.com/v/TLNCI>



# Company Products Overview

## A) Khazra Chelated Nano Fertilizers: New Generation of Fertilizers

### Instruction

All Khazra Chelated Nano fertilizers are soluble in water and applicable through both foliar spraying and soil application. There would be no need to use chemical fertilizers in greenhouses as far as the recommended instructions by Khazra's experts are followed exactly; that is, chemical fertilizers can be completely replaced by Khazra Chelated Nano fertilizers. Except the above-mentioned case, in farms and gardens (orchards) Khazra Chelated Nano fertilizers should be used as supplements along with base fertilizers (like urea, potassium sulfate, and triple superphosphate) which are routinely applied. Khazra Chelated Nano fertilizers instructions, for different orchard and agricultural products, are provided on the company's website:

<http://en.khazra.ir/index.aspx?fkeyid=&siteid=2&pageid=354>



# Company Products Overview

**B) Bonza Chelated Mineral Supplements: New Generation of Livestock and Poultry Supplements**

<sup>®</sup> بن ز ا Bonza <sup>®</sup>



# Company Products Overview

## B) Bonza Chelated Mineral Supplements: New Generation of Livestock and Poultry Supplements

In the field of livestock and poultry nutrition, due to high cost of organic supplements, the needed micronutrients for herds are mostly provided through mineral sources (non-organic). Because of the low bioavailability of these compounds, a large amount of mineral compounds should be added to animals' diet, most of which will exit through the animals' feces and cause environmental contamination.

In addition, studies show that delivery of mineral elements in the form of these compounds causes various damages to biomolecules (proteins, fats, and nucleic acids) in the body.

Also, the existing organic supplements, especially chelated amino acids, despite better absorption and without damaging problems, are not cost-effective and may undergo structural changes because of their low stability against physical and chemical changes.

Regardless of these points, the high cost of providing these supplements and not being cost-effective in terms of benefit-cost ratio have made many in the field of livestock and poultry avoid using organic micronutrient supplements and instead just use them at best as "additional supplements" with other supplements.





# Company Products Overview

## **B) Bonza Chelated Mineral Supplements: New Generation of Livestock and Poultry Supplements**

Supplements produced based on “advanced Chelate Compounds technology” by the trademark of Bonza have higher bioavailability and biocompatibility compared to best available supplements around the world. In addition, the designed structures using this technology not only do not cause any damages to biomolecules but also improve parameters involved in protecting the alive system from stresses and damages (such as antioxidant defense). As a result, the designed compounds by this technology are free of any problems and limitations caused by the existing supplements.

Studies show that due to simultaneous improvement of metabolism, growth rate, and immune system function by Bonza supplements, even in tensions and environmental stresses (like heat), we can observe herds’ defense systems efficiency increase, which results in the highest yield and less mortality rate; that is, Bonza supplements play the role of metabolism optimizer.



# Company Products Overview

## **B) Bonza Chelated Mineral Supplements: New Generation of Livestock and Poultry Supplements**

By using Bonza supplements, without genetic manipulation and hormonal stimulation, and just by improving the metabolism of the living systems to the optimum level, the dream of simultaneously increasing both quality and quantity in the livestock and poultry has become true. In fact, with the help of Bonza supplements, which cause optimum balance in the metabolic system of the living organism, the qualitative and quantitative characteristics of the herd are increased simultaneously and the undesirable characteristics are reduced.

Bonza supplements are the new generation of livestock and poultry supplements that significantly increase the production quality and quantity and reduce mortality and diseases in the livestock and poultry herds.

# Company Products Overview

## B) Bonza Chelated Mineral Supplements: New Generation of Livestock and Poultry Supplements



**Bonzaplex7 Chelated Mineral Supplement,  
Livestock Specific**

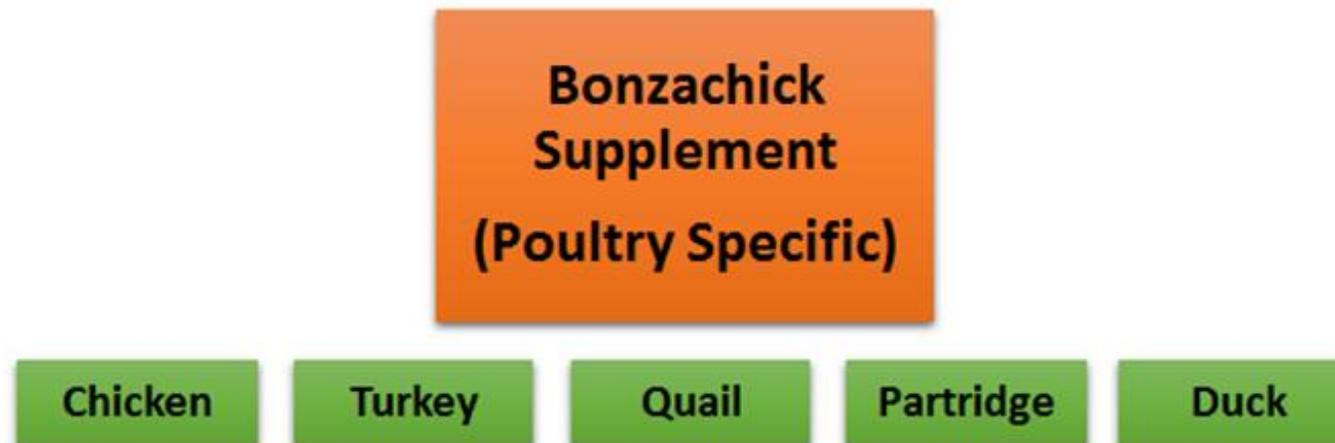


**Bonzachick Chelated Mineral Supplement,  
Poultry Specific**



# Company Products Overview

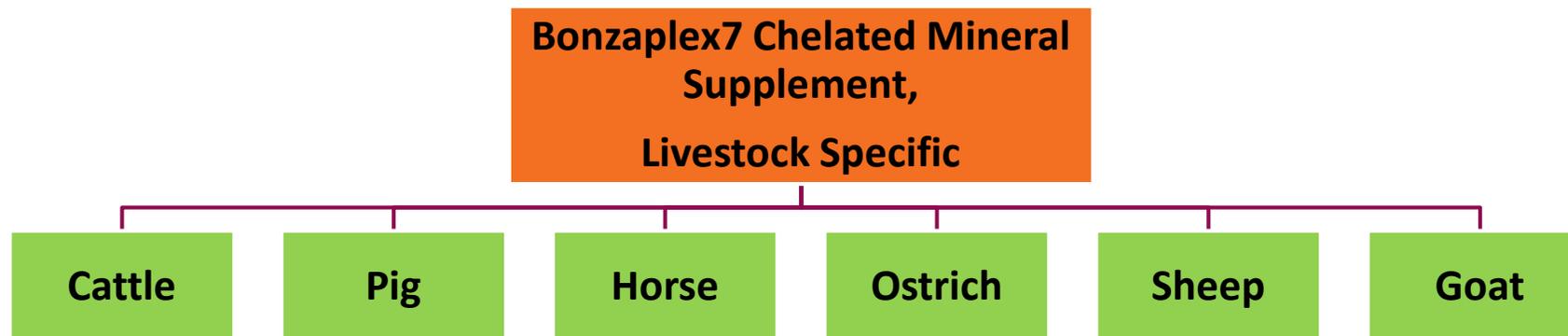
## B) Bonza Chelated Mineral Supplements: New Generation of Livestock and Poultry Supplements





# Company Products Overview

## B) Bonza Chelated Mineral Supplements: New Generation of Livestock and Poultry Supplements



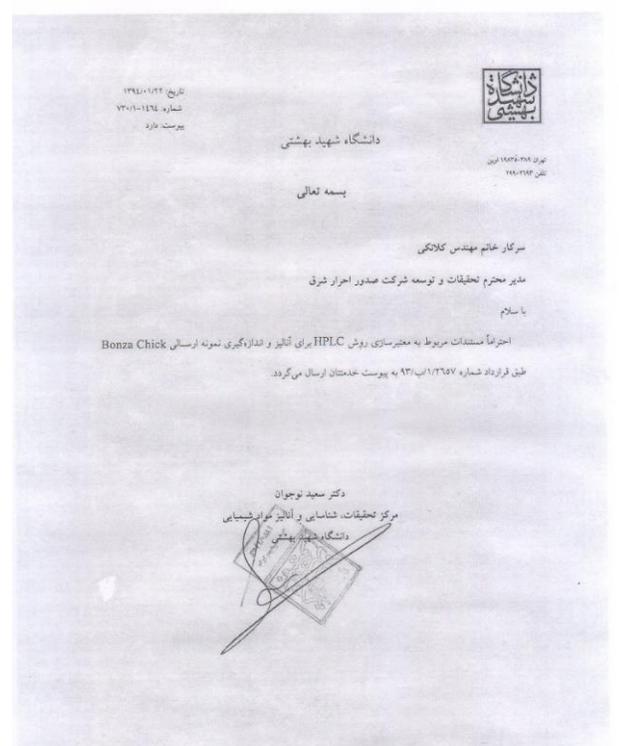


# Company Products Overview

## **B) Bonza Chelated Mineral Supplements: New Generation of Livestock and Poultry Supplements**

Sodour Ahrar Shargh Knowledge-based Company also manufactures single element chelated mineral supplements (Bonza-Fe, Bonza-Zn, Bonza-Mn, Bonza-Cu, Bonza-Se, Bonza-Cr, and Bonza-Co) based on “advanced Chelate Compounds technology”. These supplements are used in feed factories and sometimes in large farms so as to regulate livestock, poultry, and aquatic species’ diet.

# Company Products Overview



## No Bonzachick Residues in Chicken Meat- Shahid Beheshti University The Report Shows the Absence of Bonzachick Residues in Chicken Meat

Two one-gram specimens were taken from two meat samples titled “J” and “G” and the extraction was carried out through ultrasonic method. The final extracted solution was used through a valid method to measure the complex. In chromatograms obtained from both samples, no ligand peaks were observed.

In the next step, a certain amount of complex (50 and 200  $\mu\text{g}/\text{kg}$  meat) was added to sample “G” and the extraction was carried out again. The final extracted solution was applied through a valid method to measure the complex. Ligand peaks were observed in the obtained chromatograms.

# Company Products Overview



**College of Agriculture Tehran University Study Results**

شماره سند: 3210111  
تاریخ: 3/2/2014  
موضوع: بررسی اثرات کمپلکس بونزا و بونزاکلیک بر عملکرد، خصوصیات کتله و پارامترهای ایمنی مرغهای نر

بسم الله الرحمن الرحیم  
با سلام و احترام عرض می‌نماید  
اینجانب در راستای انجام پروژه علمی با عنوان «اثرات کمپلکس بونزا و بونزاکلیک بر عملکرد، خصوصیات کتله و پارامترهای ایمنی مرغهای نر» در محل شرکت سودور اهرار شارغ، در تاریخ 3/2/1392 با شماره قرارداد 3210111 همکاری داشته‌ام. بدینوسیله به استحضار می‌رسانم که نتایج حاصله از این مطالعه را در فایل پیوسته تقدیم می‌نمایم. خواهشمند است در صورت تمایل، مراتب رضایت خود را در قالب یک نامه به این دانشگاه اعلام فرمایید.

مohammad Hassan Nazaran  
Scientific Assistant of College of Agriculture & Natural Resources,  
University of Tehran

بسم الله الرحمن الرحیم  
با سلام و احترام عرض می‌نماید  
اینجانب در راستای انجام پروژه علمی با عنوان «اثرات کمپلکس بونزا و بونزاکلیک بر عملکرد، خصوصیات کتله و پارامترهای ایمنی مرغهای نر» در محل شرکت سودور اهرار شارغ، در تاریخ 3/2/1392 با شماره قرارداد 3210111 همکاری داشته‌ام. بدینوسیله به استحضار می‌رسانم که نتایج حاصله از این مطالعه را در فایل پیوسته تقدیم می‌نمایم. خواهشمند است در صورت تمایل، مراتب رضایت خود را در قالب یک نامه به این دانشگاه اعلام فرمایید.

مohammad Hassan Nazaran  
Scientific Assistant of College of Agriculture & Natural Resources,  
University of Tehran

According to the obtained results in this study, adding Bonzachick to broiler's diet or adding Bonza adjuvant to vaccine induces significant increase in live, thigh and breast weight and decreases mortality and abdominal fat. So using these products, separately or simultaneously, makes higher European production efficiency factor. By using this technology, the profitability of poultry industry can be improved.

The Results of a Study Conducted on Effects of Bonzachick Supplement on Broiler Chickens' Growth Performance - College of Agriculture and Natural Resources - Tehran University

**College of Agriculture and Natural Resources- Study Results at University of Tehran**

شماره سند: 2785280  
تاریخ: 13/03/92  
موضوع: ارزیابی قابلیت جذب و هضم مس، روی، منگنز و سلنیوم در گاوهای نر Holstein در کمپلکس BONAplex

بسم الله الرحمن الرحیم  
با سلام و احترام عرض می‌نماید  
اینجانب در راستای انجام پروژه علمی با عنوان «ارزیابی قابلیت جذب و هضم مس، روی، منگنز و سلنیوم در گاوهای نر Holstein در کمپلکس BONAplex» در محل شرکت سودور اهرار شارغ، در تاریخ 13/03/92 با شماره قرارداد 2785280 همکاری داشته‌ام. بدینوسیله به استحضار می‌رسانم که نتایج حاصله از این مطالعه را در فایل پیوسته تقدیم می‌نمایم. خواهشمند است در صورت تمایل، مراتب رضایت خود را در قالب یک نامه به این دانشگاه اعلام فرمایید.

M. Dehghan Banadaki - Faculty Member of the Department of Animal Science,  
University College of Agriculture and Natural Resources, University of Tehran

Following the notification No. 2785280 Dated 13/03/92 And with regard to the final report and receiving the full validity of the contract , hereby termination of your study will be announced with following features:

Project Title: Evaluation of Bioavailability and Digestibility of Copper, Zinc, Manganese, and Selenium from via Mineral Resources, BONAplex Complex in Holstein Cows  
Contract Number: 2785280  
Name of the Employer: Sodour Ahrar Shargh Knowledge-based Company  
Start date: Asar 91- December 2012 Ending Date: Bahman 92- February 2014

P-Value	SEM	NANO BONZA-MIX	NANO BONZA-PLEX	AVAILA	Control	parameter
0.04	4.47	28.2 <sup>a</sup>	28.4 <sup>a</sup>	27.9 <sup>a</sup>	25.9 <sup>b</sup>	Copper
0.02	2.81	45.7 <sup>a</sup>	46.9 <sup>a</sup>	45.1 <sup>a</sup>	41.9 <sup>b</sup>	Zinc
0.01	0.98	45.2 <sup>a</sup>	46.9 <sup>a</sup>	45.1 <sup>a</sup>	41.9 <sup>b</sup>	Manganese

Means in one row with various English alphabets have significant difference.  
(SEM) The standard error of the mean

**Overall Conclusion**  
Results of the present study showed that Bonzalex Chelated forms of Manganese and Copper can efficiently increase the bioavailability of these elements for cattle through enhancement of elements absorption through digestive system in a way that this improvement in bioavailability of these minerals is much more in Bonzalex chelated form, Compared to Chelated form of AVAILA. Also, feeding by Bonza chelated supplement increased serum level of Zinc and Selenium in cattle compared to AVAILA

Appreciation  
We would like to appreciate the vice president of University College of agriculture and natural resources, university of Tehran and the animal science faculty. Also a special thanks to the Executive Manager and chairman of management board and the expert team in Sodour Ahrar Shargh Company.

The results of a survey conducted under the supervision of Dr. Dehghan in Tehran University - The College of Agriculture and Natural Resources. In this study, it was proved that micronutrients absorption in the form of Bonzalex supplement compound is better than Availa.

The Results of a Study Conducted on a Comparison Between Bonzalex7 Supplement Absorption and Availa Supplement in Holstein Cattle - College of Agriculture and Natural Resources - Tehran University

# Company Products Overview



The screenshot displays the Oxford Academic website for the journal Poultry Science. The header includes the Oxford Academic logo, the journal title 'Poultry Science' with a bird icon, and navigation links such as 'Issues', 'Subject', 'More Content', 'Submit', 'Purchase', and 'About'. A search bar is located on the right. The main content area features an article titled 'Effects of water supplementation of an organic acid-trace mineral complex on production and slaughter parameters, intestinal histomorphology, and macronutrient digestibility in growing ostriches'. The authors listed are Hossein Seyfouri, Hossein Ali Ghasemi, Iman Hajkhodadadi, and Maryam Hafidi. The article was published on 17 April 2019. A sidebar on the right promotes 'SCIENCE & MATHEMATICS' and the 'Journals Career Network'.

Issued Article in the Prestigious Journal of Poultry Science:  
Improved Performance and Absorption Rate of Micronutrients in  
Ostrich by Bonzaplex Supplement



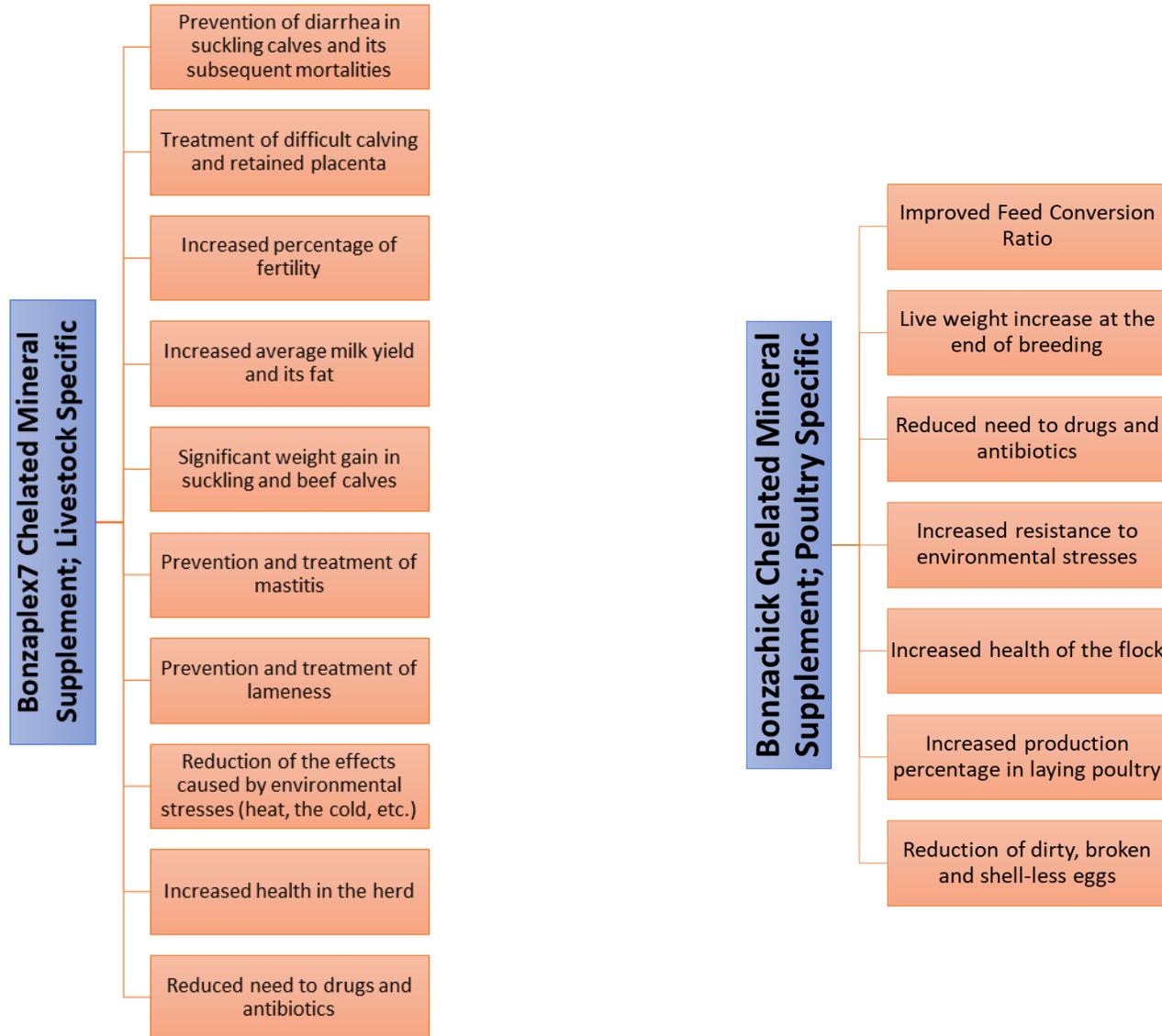
# Company Products Overview

## **B) Bonza Chelated Mineral Supplements: New Generation of Livestock and Poultry Supplements**

The title of four articles on effects of supplements developed based on “advanced Chelate Compounds technology” (Bonza) are as follows:

1. Growth Performance, Mineral Digestibility, and Blood Characteristics of Ostriches Receiving Drinking Water Supplemented with Varying Levels of Chelated Trace Mineral Complex.
2. Comparative effects of zinc-nano complexes, zinc-sulphate and zinc-methionine on performance in broiler chickens.
3. Effects of water supplementation of an organic acid-trace mineral complex on production and slaughter parameters, intestinal histomorphology, and macronutrient digestibility in growing ostriches
4. Bonzachick: A new feed additive decrease mortality rate and increase performance of broiler chickens

# Company Products Overview





# Company Products Overview

## B) Bonza Chelated Mineral Supplements: New Generation of Livestock and Poultry Supplements

### Instruction

Bonzachick supplement (poultry) can be mixed with feed, concentrate, or dissolved in water. This supplement should be used on a daily basis according to the table of instructions.

There is no need to change the diet (including an increase or decrease in mineral compounds, vitamins, etc) when this supplement is used, so it is used as an “additional supplement” with other supplements. This supplement can also replace routine mineral supplements, yet in such a case, the consumption dose would be more than that of the table of instructions.

Bonzaplex7 supplement (livestock) can be mixed with feed, concentrate, or dissolved in water or milk (for calves before being weaned). This supplement should be used on a daily basis according to the table of instructions. There is no need to use organic supplements (like Availa), containing minerals, when Bonzaplex7 is used, so it is used as an “additional supplement” with other supplements. This supplement can also replace routine mineral supplements, yet in such a case, the consumption dose would be more than that of the table of instructions.



## 5. Events

Sodour Ahrar Sharqah



# Events

## Receiving an offer by RUSNANO to transfer the technology to Russia and establish a factory there for the first time in the history of Hi-Tech in Iran

**From:** Maxim.Tutyinin@rusnano.com [mailto:Maxim.Tutyinin@rusnano.com]  
**Sent:** Wednesday, July 06, 2011 6:34 PM  
**To:** Khazra Sales (sales@khazra.ir)  
**Cc:** Mansur.Chechenov@rusnano.com  
**Subject:** The first Nano Chelat Iron Fertilizer- NANO FESTIVAL IRAN

Dear Mr. Saleh,

I hope you are well and OK.

As for our news. Early this year RUSNANO was transformed from the state corporation backed by the Russian governmental money and support, into open joint stock company that is more flexible and more attractive to deal with for businesses. Now we are big investment fund to finance perspective nanotechnological projects in different fields and shield them from different venture risks.

RUSNANO strategy does not change, but we have some minor corrections in our strategy to search new projects. If in previous years we relied on RUSNANO project office's "open window" where all interested persons can applied for financing for their nanoprojects and developments, now we are starting more targeted search for the projects that are of our needs. We are defining parameters for this projects that according to our estimation would be advantageous for the future project's development, marketing, sales and profits.

Our middle-term view on our future activity pushes us to look for new perspectives to go more specifically into some projects that deal with agriculture. We intend now to make our internal market research for the Russian perspectives of the projects like yours, and estimate how it could be beneficial for RUSNANO and Russian market as well.

In this respect we need to continue cooperation with your company to look more precisely what we can do together and how can we do good business.

I am looking forward to hearing from you about your news as for your US patent activity, and you views on cooperation with RUSNANO.

Best regards,

Maxim Tutyinin  
Senior Expert  
Department for International Cooperation  
RUSNANO  
+7-(495)-988-53-88, ext.13-50

**From:** Mansur.Chechenov@rusnano.com [mailto:Mansur.Chechenov@rusnano.com]  
**Sent:** Monday, July 11, 2011 12:25 PM  
**To:** Khazra Sales  
**Cc:** nail.gubaev@rusnano.com  
**Subject:** RE: RUSNANO

Dear Mrs Saleh

Thank you for your reply!

As you know, RUSNANO's mission is to pick, evaluate and co-finance nano-related projects. We have certain limitations, most importantly – we only co-finance Russia-based projects.

Therefore we at RUSNANO would be looking for building a full scale nano-fertilizer plant with the use of your technology on Russian soil. This being said-what we can suggest is that Khazra might go international and expand to Russian Federation. Cooperation with RUSNANO has very strong benefits, such as Government support, guaranteed sales, secure and acceptable terms of cooperation and access to both public and private funds.

Ways of our cooperation may vary.

We can either make a joint-venture between Khazra, Rusnano and any strategic co-investor, or we can purchase the license and build the plant on our own, with Khazra managing the projects implementation stage.

Now that we realize your company management would be looking for additional information we are ready to arrange a meeting and provide with any information or feedback needed.

Thank you and have a nice day!

Best regards,

Mansur Chechenov

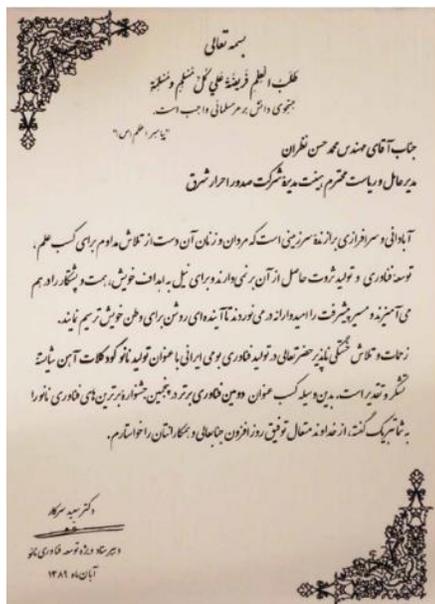
# Events

**Mr. Amadio's visit - the United Nations representative and president of United Nations  
Industrials Development Organization (UNIDO) in Iran - from the factory of SASH Co.**



# Events

Selected as the “Distinguished Technology Contributor Company of the Year” by Iran Nanotechnology Initiative Council (INIC) in 2010



# Events

SASh Co.: the only Iranian knowledge-based private company in the field of nanotechnology with a crucial role in promoting this technology through presenting over dozens of news reports and live programs from National Iranian Radio and Television in Iran.



“The review of nanotechnology status in Iran and the world” in a 45-minute program on IRINN Channel, with the presence of Mr. Mohammad Hassan Nazaran (the CEO of SASh Co.) and Dr. Sa’eed Sarkar (the Secretary of Iran Nanotechnology Initiative Council (INIC))



# Events

Participating in more than 40 domestic and 4 international exhibitions over the recent years



# Events

Successful participation in the international nanotechnology festivals in various countries around the world including Russia, Japan, and South Korea





# Events

- ❑ The only exporter of nano products from Iran to Greece, Turkey, Jordan, Emirate, Kuwait, Oman, South Korea, Malaysia, Australia, Colombia , Argentina, Uruguay, etc., as the owner of the technology and sole producer of nano chelated fertilizers in the world
- ❑ Publishing over dozens of international articles
- ❑ Khazra Chelated Nano fertilizers application by municipalities of Tehran, Isfahan, and Karaj in order to reduce air pollution and freshen the air with more oxygen



# 6. Special Projects and Programs

Sodour Ahraf Sharqiyah



# Special Projects and Programs

SASh Co. is currently exporting its products to various countries all around the world. In order to win international partnership in the form of Joint Venture (JV), one of the world's leading companies has valued three categories of SASh Co. products (Khazra Chelated Nano fertilizers and Bonza livestock and poultry feed supplements) at several hundred million dollars and subjected to international partnership.



**Thank You**

Sodour Ahrar Sharqah