

IONITE SUBSTRATES FOR SUSTAINABLE AND HIGH EFFICIENT PLANTS CULTIVATION



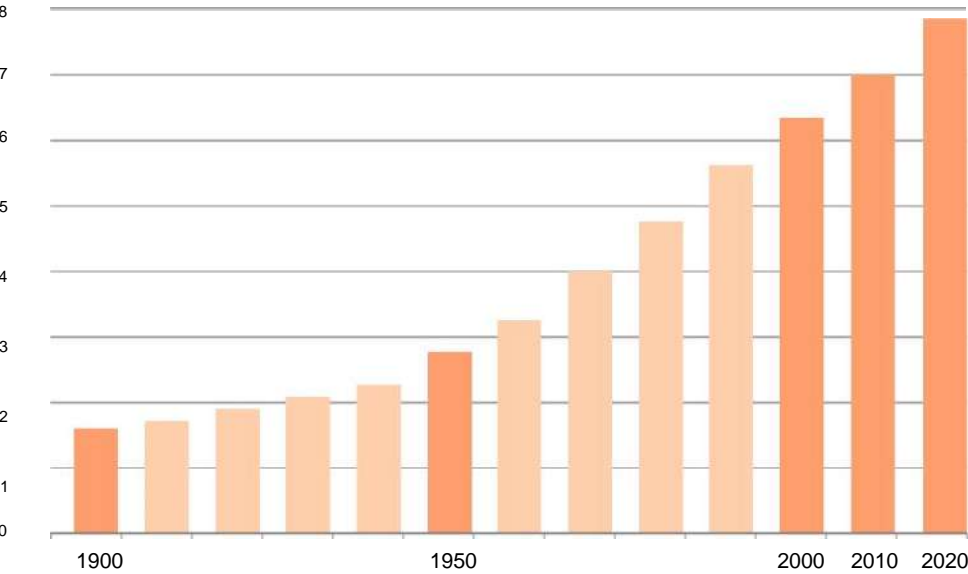
IONITE SUBSTRATES FOR SUSTAINABLE
AND HIGH EFFICIENT PLANTS CULTIVATION



HOT ISSUES

IONITE SUBSTRATES FOR SUSTAINABLE
AND HIGH EFFICIENT PLANTS CULTIVATION

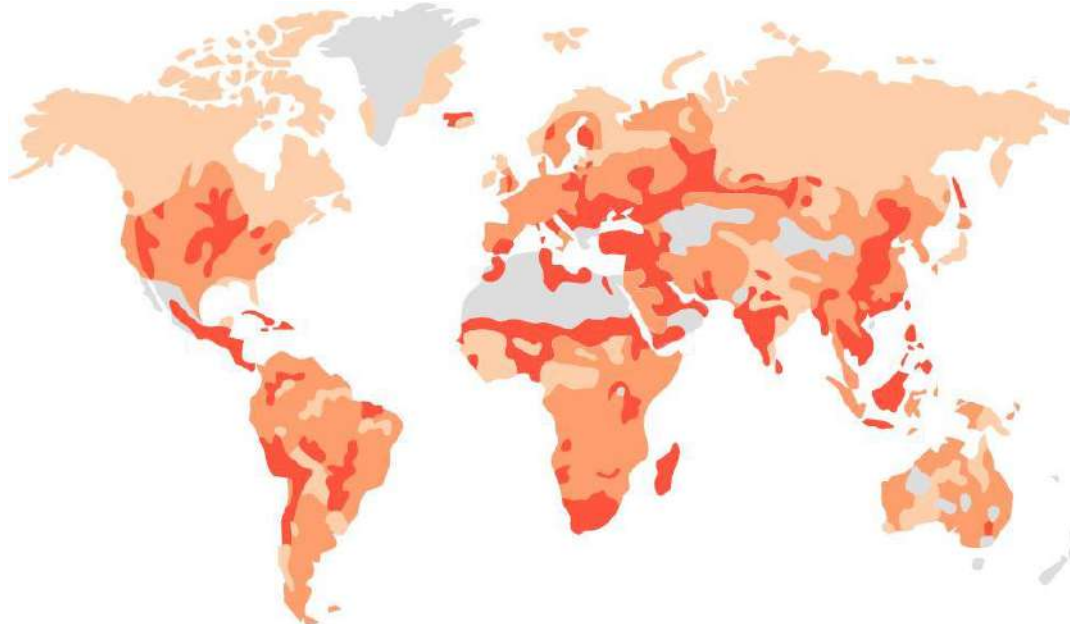
#1 – World population growth in billions



#1 – World population growth

Source: International Food Policy Research Institute

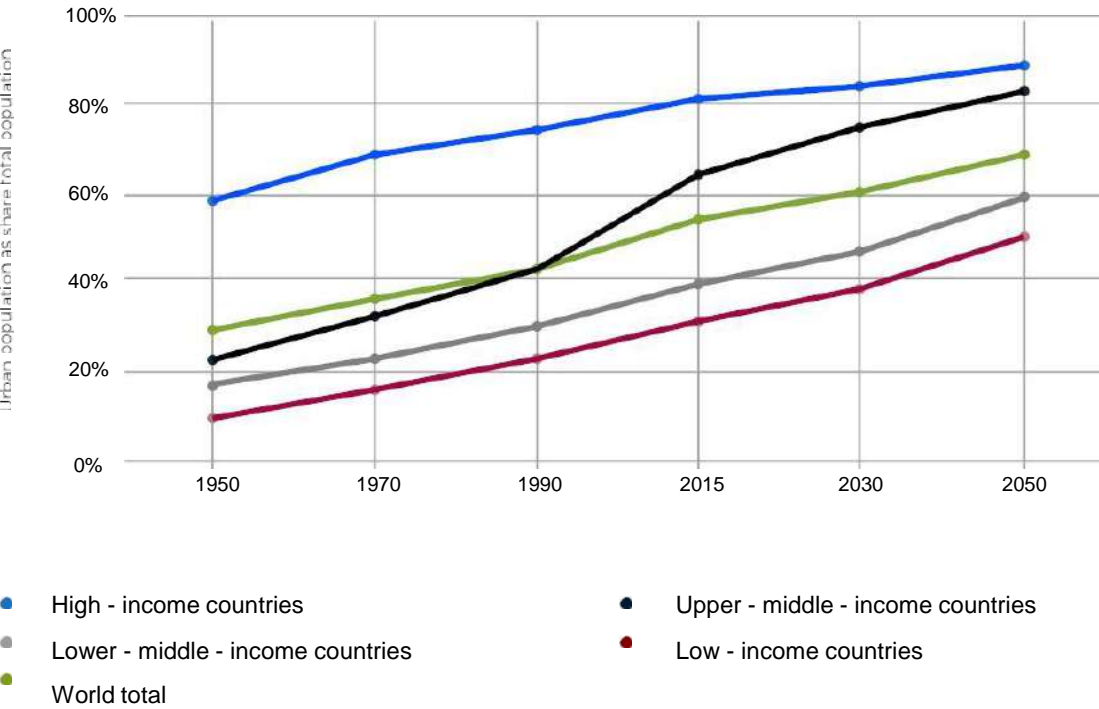
Very degraded soil Degraded soil Stable soil Without vegetation



#2 – Soil Fertility

Source: UNEP, International Soil Reference and Information Centre (ISRIC), World Atlas of Desertification, 1997

Percentage of population living in urban areas worldwide from 1950 to 2050, by country income groups



#3 – Urbanization

Statista 2021

Soil: key environmental issues




Land
desertification



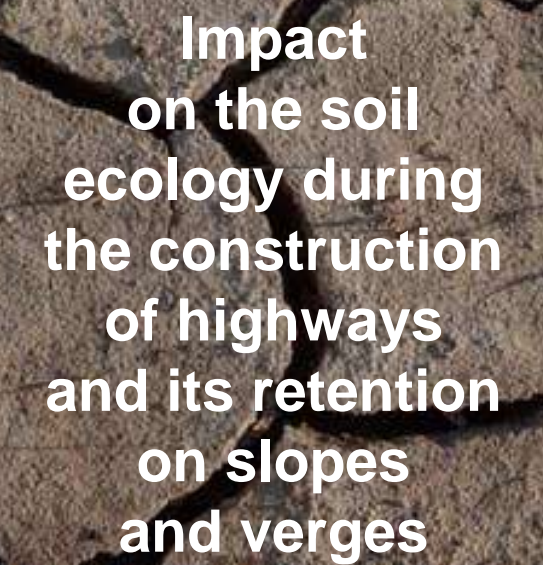
Degradation
of the soil
mineral base,
dehumification
and soil
depletion



Pasture
erosion



Deep damage
and the need
for land
reclamation
in mining areas



Impact
on the soil
ecology during
the construction
of highways
and its retention
on slopes
and verges

Agricultural industry issues



Soil depletion and degradation

- fresh land should be regularly used for agriculture

Wide range of fertilizers

are used to reach an appropriate harvest

Water and soil pollution

by nitrates and phosphates has dramatic impact to environment

Significant efforts needed

to keep soil fertility worldwide every year

Seedlings adaptation

during transplantation and cloning processes

CAPEX of hydroponics

as the main alternative to common agricultural technics require high CAPEX and have a certain limitations



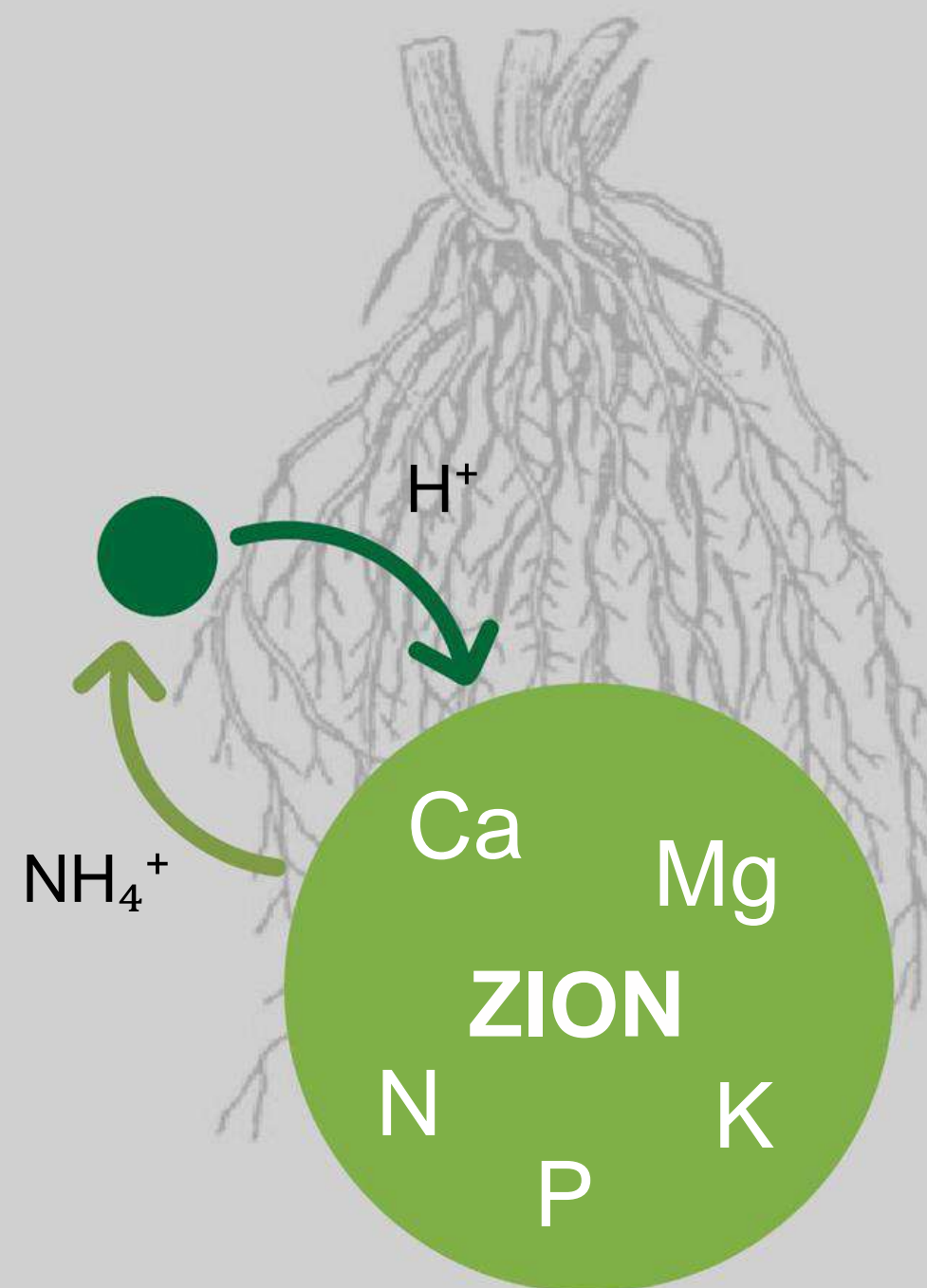


ABOUT ZION

IONITE SUBSTRATES FOR SUSTAINABLE
AND HIGH EFFICIENT PLANTS CULTIVATION

ZION — smart approach to plants feeding

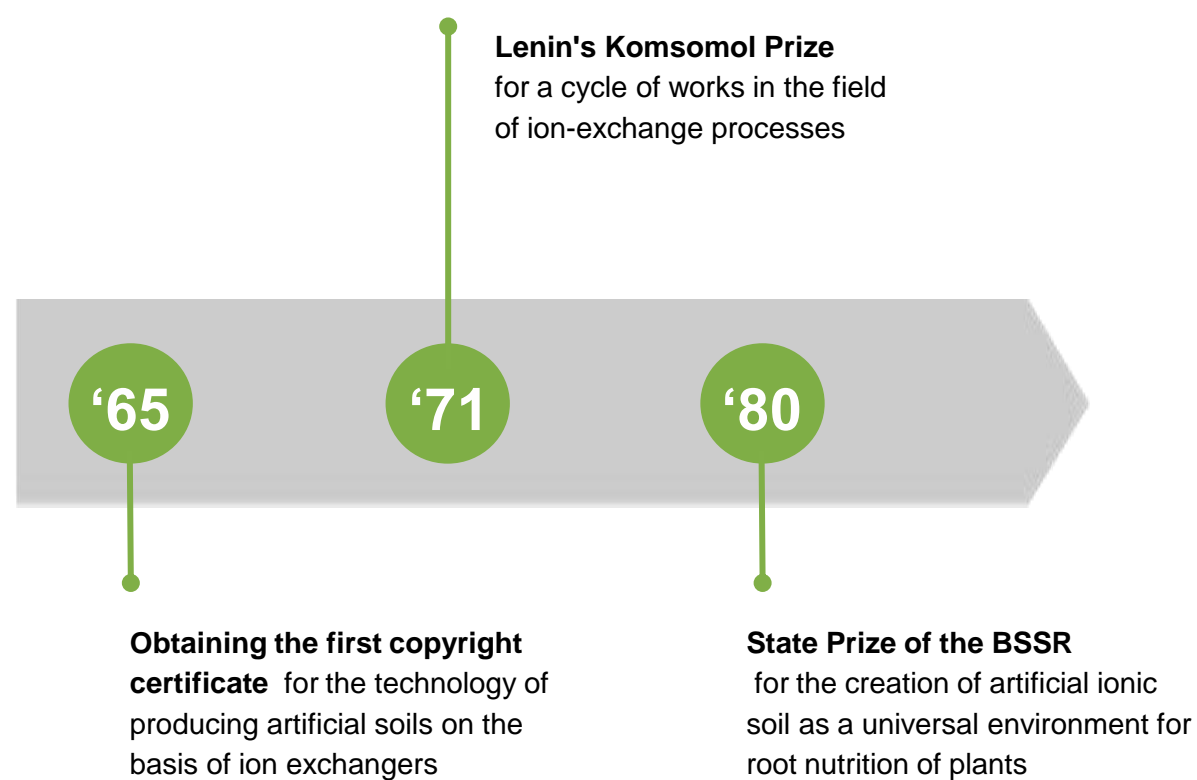
Nutrients are released into the soil
and consumed by the plant only due
to ion exchange between ZION
substrate and metabolites excreted
by roots during plant development.



All nutrients are linked with functional groups of unique natural mineral to ion-exchange principle. No washing of nutrients from the soil due to overwatering, floods or heavy rains. So plant always consume the most suitable, optimal combination of nutrients for the most sustainable growth.



ZION history



The history of the creation of ZION.

The first ionic substrates were developed for the space program.

Academician Vladimir
Sergeevich Soldatov.

<https://youtu.be/Jvj8dPyls-U>

ZION history



'16

- **Foundations of the ZION Group of Companies**
- **Carrying out large-scale R&D** adapting ionitoponics technology to modern market requirements (environmental friendliness, cost)

'17

- **Obtaining a patent for a new environmentally friendly type of ionite substrate**
- Beginning the construction of a pilot production complex

'18

- **Launch of a pilot production complex** capacity of 500 tons per year
- Market launch of the first line of consumer products

'19

- **Entering the consumer market**
 - Sales growth in the B2C segment
 - First agreements with regional retailers, key marketplaces, plant nurseries and seed producers

'20

- **Development of distribution in Russia.** Signing of the first contracts with federal retailers in FMCG category.
- **Start of international sales:** USA, China, Estonia, Israel.
- **MOU signed** in the UAE, the Republic of Uzbekistan for large-scale pilots and localization of production.

'21

- **Expansion of production.** Commissioning of a new workshop
- **Completion of the first phase of pilot projects abroad.** Entry into B2C and B2B markets of the GCC countries.
- **Expansion of distribution in the Russian Federation.** Signing contracts with federal retailers of DIY category
- **International sales development.** Establish subsidiary in HK and start deliveries to the Chinese domestic market.

ZION applications



Cities beautification & Home gardening

- Flowers
- Lawns
- Vertical landscaping
- Rooftop gardening
- Trees/parks
- Sports (golf, tennis, football)

Agriculture on any kind of soil

- Fruit and vegetables
 - Melons and berries
 - Cattle breeding
 - Cannabis
- (certain areas & industries – pharma)

Elimination of industry impact on soil

- Oil and gas related soil depletion
- Cotton industry related soil depletion
- Timber
- Wine

ZION key benefits



**ECO-FRIENDLY:
BASED ON
NATURAL MINERAL**

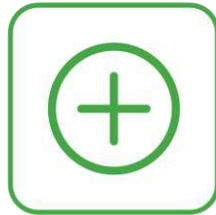


**EFFICIENT
PLANT GROWTH
ON ANY SOIL**



User Friendly

(Add once and then just watering the plant properly)



**REASONABLE
SUBSTRATE
CONSUMPTION**



**PRODUCTIVE
UP TO 3 YEARS**



Enviromental Friendly

(100% natural material, no nitrates, growth enhancers, phytohormones, etc)



**IT IS NOT
MINERAL
FERTILIZER**



**NO OVERDOSING
OR ROOT
BURN RISKS**



Productive

(Increase the harvest on depleted soils due to balanced nutrition by plants request)

Long-term effect

(Productive up to 3 years)

ZION ionite substrates



ZION Substrate can be used as an additive to any kind of soil, including sand, and make it fertile.

ZION is not regular fertilizer!

It is high concentrated granulated nutritious media for plants growing. Plants can grow directly on the ZION beads.

ZION is a combination of nutrients (N, P, K, S, etc) captured by natural ion-exchangers as positively or negatively charged ions.
(patent# 2662772, 16.11.2017)

Historically ionite substrates were developed for application in space shuttles, submarines, shelters, arctic stations, etc as artificial soil for plants cultivation.





CASES

IONITE SUBSTRATES FOR SUSTAINABLE
AND HIGH EFFICIENT PLANTS CULTIVATION

Depleted soil remediation



Depleted soil from
mines remediation

Sample **C** – depleted soil
Samples **1, 2** – addition of 10% and 50%
of granulated ZION, respectively

Root system development



The *Dactylis
glomerata* roots

developing in sand consist of 2% of granulated ZION (**left**)
and in the bare sand (**right**)

Acceleration of natural soil formation



C 1 2



C 1 2

**Effect of granulated
ZION substrate adding
to the water-washed
sand:**

C – control (peat soil);
Samples 1-2 contain 5% and 10% of ZION
(95% and 90% of water-washed sand),
respectively.

Acceleration of natural soil formation



2

1

C



Experiments on Alfalfa growth

Sample **C** – control (sand)

Samples **1, 2** – addition of 1% and 2%
of granulated ZION, respectively

Seedlings growing

Cucumber plant (Cucumis sativus)

growing on the standard garden soil (C)
and 1% and 2 % additives of granulated ZION,
respectively



C

1

2

Improving the arrangement of grass lawns

Street lawn restoration in Moscow

C – control (regular lawn)
1 – addition of 5% of granulated ZION



C



1



Seedlings growing

Green pepper (*Capsicum annuum*) growth

Sample **C** – control (peat soil)
Sample **1** – 5% additive of granulated
ZION to bare sand



C

1





Seedlings growing



C

1

14 days

Tomato (*Solánium lycopérsicum*) growth

Sample C – control (peat soil)
Samples 1 – 5% additive of granulated
ZION to bare sand



C

1

21 days

Lettuce cultivation



Lettuce
cultivation
(3,5 weeks)

C – control (regular peat soil)
1 – 3% of granulated ZION additive

C

1



ZION PRODUCT LINE

IONITE SUBSTRATES FOR SUSTAINABLE
AND HIGH EFFICIENT PLANTS CULTIVATION

ZION main product line



Greenery
and herbs



Vegetables



Classic



Flowers



Orchids



Indoor plants



Conifers



Fruit and berries



Strawberries



Lawns

ZION

full product
portfolio



Sachet

30 g - 7 SKU



PET cans

700 g - 9 SKU



Craft paper bags

2.3 kg - 10 SKU



Craft paper bags

3.8 kg - 10 SKU



Craft paper bags

10 kg - 10 SKU



Craft paper bags

20 kg - 9 SKU



Big bags

1000 kg – 10 SKU



RECOMMEN- DATIONS



M. V. LOMONOSOV
MOSCOW
STATE
UNIVERSITY

TRAINING AND EXPERIMENTAL LANDSCAPE AND SOIL-LYSIMETRIC PARK AT
THE BASE OF SOIL SCIENCE FACULTY OF MSU
AGROCHEMISTRY AND PLANT BIOCHEMISTRY DEPARTMENT

REFERENCE

In the period from 20.04.2019 till 10.08.2019, in the greenhouse of the Training and Experimental Landscape and Soil-Lysimetric Centre at Soil Science Faculty of M. V. Lomonosov Moscow State University, a field experiment was conducted to test ion-exchange substrates ZION against the background of various types of ready-made nutrient media (commercial peat and soil, coconut substrate, deoxidized high-moor peat). The experiment was carried out when growing ornamental, vegetable and berry crops on vertical gardening blocks "Vertical curative gardens" with integrated automatic watering.

The following crops were grown: chlorophytum comosum (*Chlorophytum*), remontant garden strawberry (*Fragaria ananassa*), lettuce (*Lactuca sativa*), low-growing tomato (*Solanum lycopersicum*), nasturtium (*Tropaeolum*). Addition of ion-exchange substrates to the soil amounted from 2 % to 10 % of the total volume of the mixture and was carried out by mixing in the test media immediately before seeding. Watering was fulfilled with water from the centralized water supply system of the city of Moscow; there was no additional fertilizing during the entire period of the experiment. The experiment was repeated 3 times.

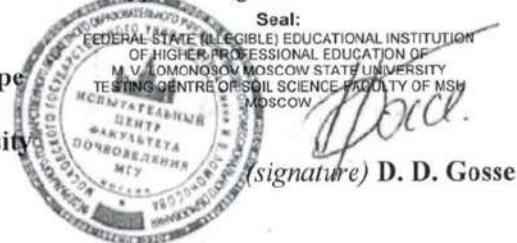
During the experiment, the following results were obtained for plants grown on media with addition of the ion-exchange substrate ZION:

- *Chlorophytum*: active development, rapid growth and, as a result, significantly large biomass, rich color of the leaf apparatus;
- *remontant garden strawberry*: rapid adaptation of young plants after replanting, formation of a strong root system, as well as active blossoming and earlier fruiting.
- *low-growing tomato*: intensive development of the plant at all stages of its growth (gathering of green biomass, blossoming, fruiting);
- *lettuce*: rapid gathering of green biomass;
- *nasturtium*: a longer vegetation period, an extended period of ornamentality (blossoming).

The results were obtained in comparison with plants in the control group grown without addition of the ion-exchange substrate. Separately, it should be noted that strawberries, tomatoes and lettuce grown with ZION addition, demonstrated excellent palatability.

The results confirm the efficiency of ion-exchange substrates ZION, when growing ornamental, vegetable and berry crops, regardless of the type of original soil.

Head
of the Training and Experimental Landscape
and Soil-Lysimetric Centre
of M. V. Lomonosov Moscow State University
PhD



(signature) D. D. Gosse



THE BOTANIC GARDENS

of M. V. Lomonosov Moscow State University
, 26 Prospect Mira, bldg 1, Moscow, 129090. Telephone: + 7 (495) 630-58-80. www.hortus.ru

03.02.2020

REVIEW

on the ion-exchange nutrient substrate Zion for flowers

In the branch of the Botanic Gardens of M. V. Lomonosov Moscow State University "Aptekarsky Ogorod", a number of studies were carried out on growing orchids with application of ion-exchange substrates TM ZION in combination with foam glass and pine bark. Based on the results obtained, the following conclusions are made:

1. Application of the ion-exchange substrate ZION for flowers increases the rate of growth and development of orchids by 2–4 times.
2. Turning up the number of leaves and roots as a result of application of ZION for flowers allowed Phalaenopsis plants to develop more peduncles and flowers compared to those in the control group grown without ZION substrate application.
3. The optimal way for stimulating Phalaenopsis to blossom is to add the ion-exchange substrate ZION for flowers in the amount of 5 % vol.
4. Increasing in ZION for flowers up to 20 % of the total volume of the substrate does not exert negative impact on growth and development of plants, as well as on formation of rosettes of plants when growing in foam glass and pine bark.
5. The ion-exchange substrate ZION for flowers is recommended for growing Phalaenopsis for industrial production, gardening and hobby markets.

Researcher, PhD



(signature) O. Yu. Mironova

Federal State Budgetary Educational Institution of Higher Education
"M. V. Lomonosov Moscow State University"
BIOLOGY FACULTY of MSU
OGRN 103700258694
THE BOTANIC GARDENS of MSU
FOR DOCUMENTS



zion_rus_ Incredibly beautiful video about useful features of "ZION for Flowers" from Marina @zacvetet. 🌸🌸🌸
Scroll through! 📱

Today I will show you how to grow such gorgeous flowers.
This year we decided to decorate Lisa's playhouse in pink shades.
So, let's rewind to last month.
I bought balcony boxes — 40 cm and 80 cm. On the sunny side I decided to plant "Easy Wave" petunias in "Pink Passion" color, and on the shady side — Waller's Impatiens "Musica".

zacvetet

Marina Patrina 🌿 **zacvetet**
Anchorwoman

205 Posts

138 k Followers

57 Following



zion_rus_ "ZION for orchids" is recommended for all types of them. We are sharing with you Ekaterina's feedback @e.vesna on using "ZION for orchids" as a top dressing for dendrobium. 🌸🌿

...
The text has the original spelling and punctuation..
...
Dendrobiums.

Good morning, dear 🌸.
Today I am going to reveal my secrets of growing dendrobiums.

Soil — of all the options, I liked the Peter Peat Soil for Orchids. It is a mix of bark, expanded clay, and lightweight, neutral soil.

e.vesna

Ekaterina Vesna 🌸 **Landscape Garden**
Personal Blog

1 303 Posts

1,1 M Followers

3 Following



zion_rus_ How can you not share such beauty?

This is a petunia Veil grown by Anna Akinina @anna_akinina with "ZION for Flowers". 🌸

🔥 One bush. 🔥

Happy weekend everyone, surround yourself with beauty and choose the best. 🌸🌿

#zion #petunia #mygarden #flowers #bloominggarden

anna_akinina

Unusual Farmer 🌿🌱
Personal Blog

4 790 Posts

1 M Followers

4 Following

ZION Ionic substrate for vegetables

★★★★★

31.07.2020 - 00:22

+86 photos

Have you heard about ZION? How cucumbers grow on it. My balcony mini garden. The abundance of the harvest.

I have been seeing rave reviews for ZION products for a long time. But all of them are somehow too sugary, mostly adimations are verbal, there are no photos. I'm also that amateur gardener.

[Read more](#)

ZION Ionic substrate for flowers

★★★★★

08.08.2020 - 16:15

+53 photos

Houseplants bloomed all at once. What is the difference between ZION for Flowers?

Earlier I already talked about such a cool thing as ZION for Vegetables, and now I want to share about ZION for Flowers—I repeat, as for me, this type is the best. The world of gardening, and I'm not.

[Read more](#)

ZION Ionic substrate for greenery

★★★★★

20.11.2020 - 19:47

+15 photos

How to grow powerful greenery on the windowsill? Fresh harvest from the windowsill in the winter season. Mini garden in the apartment.

Hello everyone! Probably many of you have already noticed what an avid amateur gardener I am. It all started with one pack of seeds and three months. Now it has come to the point that my window sills are simply overflowing.

[Read more](#)

ZION Ionic substrate for orchids

★★★★★

09.01.2021 - 12:27

+27 photos

My orchids came to life thanks to ZION. Blooming on New Year's Eve.

Hello everyone! Zion again becomes the hero of my review today, only this time for orchids. In fact, I am very happy to try this innovation, and all my house plants are keen on it. I have forgotten what fertilization is, now I do not follow the schedule.

[Read more](#)

ZION distribution map

ZION ionite substrates are available in offline and online retail in Russia*, Belarus, Kazakhstan, Ukraine, Baltic countries as well as China, India, Israel and US.

*UPDATED ON 01.05.2021





OUR PROJECTS AROUND THE WORLD

IONITE SUBSTRATES FOR SUSTAINABLE
AND HIGH EFFICIENT PLANTS CULTIVATION

USA OEM model



When planting, add 1-3 cups of **liferocks** for each gallon in volume, mix well with soil. (1 pack of **liferocks** contains 3 3/4 cups). Dip plant's roots in **liferocks**. Plant. It's ok to be a little heavy-handed, as **liferocks** will feed your plant even longer. Slow growing plants like succulents or bonsai typically need less. Intensive growth plants like tomatoes or eggplant may need a bit more. Flowering, non-fruiting plants fall between.



To add **liferocks** to already growing plants, puncture the soil 4-10" deep at a slight slope. Fill the space you've created with **liferocks**, cover with soil, and water as normal. That's it!



Estonia, Latvia, Finland,
Sweden, Norway



ioonvahetus toitainesubstraatide taimede kasvatamiseks tootmine ja müük TM ZION Ionitoponika tehnoloogia

+372 56 21 83 23 (ENG, RUS)
+372 55 58 38 68 (EST, ENG, RUS)



Substraatide kohta Kasutusjuhend Video Koostöö Kohaletoimetamine KKK Kontaktid Kus osta?

E-POOD



Looduslik nitraadivaba toitainelisand taimede kasvatamiseks ionitoponika tehnoloogia abil

ZION – on toitainete substraat taimede kasvatamiseks ionitoponika põhimõttel.

Ionitoponika – meetod taimede kasvatamiseksioonvahetusmaterjalidel.

Lähituleviku perspektiivne agrotehniline võte taimede kasvatamiseks.

Ionitoponika märkimisväärselt erineb hüdroponikast. Hüdroponilise kultiveerimismeetodi abil on vaja toitainelahus korralikult ette valmistada, küllastada see kõigi vajalike makro- ja mikroelementidega, kontrollida pH-d, PPM (TDS) ning arvestada ka taimede kasvufaasid ja selle geenikoodi, mis nõuab teadmisi, õigeid vahendeid ja aega, mis on aeganõudev ja keeruline protsess.

Ionitoponika tehnoloogia valimisel pole neid toiminguid vaja.

Looduslik ioonne substraat ZION sisaldab oma koostises kogu taimedele vajalike ainete loetelu: vitamiine ja aminohappeid, makroelemente: K⁺, Ca²⁺, Mg²⁺, NH₄⁺, Fe³⁺, NO⁻, SO₄²⁻, H₂PO₄⁻ ja mikroelemente: Mn²⁺, Cu²⁺, Zn²⁺, MoO₄²⁻, B₄O₇²⁻, Co²⁺, Na⁺, Cl⁻ (patenteeritud tehnoloogia, ionitoponika). Normaliseerib mulla pH-taset.

Lihtsalt lisa vett!



ioonvahetus toitainesubstraatide taimede kasvatamiseks tootmine ja müük TM ZION Ionitoponika tehnoloogia

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Substraatide kohta Kasutusjuhend Video Koostöö Kohaletoimetamine KKK Kontaktid Kus osta?

E-POOD

E-pood

Showing all 25 results

☐ Laos

Tootekategooriad

Все фасовки

Järjesta populaarsuse alusel



ZION "Klassikaline"
Mass 0.7 kg

Plastkonteiner.
Arvestatud pinnasele mahuga 30-35 liitrit.

€17.80 incl. VAT

Lisa ostukorvi



ZION "Lilledede"
Mass 0.7 kg

Plastkonteiner.
Arvestatud pinnasele mahuga 30-35 liitrit.

€19.20 incl. VAT

Lisa ostukorvi



ZION "Köögiviljadele"
Mass 0.7 kg

Plastkonteiner.
Arvestatud pinnasele mahuga 30-35 liitrit.

€18.40 incl. VAT

Lisa ostukorvi



ZION "Maasikatele"
Mass 0.7 kg



ZION "Lilledede"
Mass 0,03 kg



ZION "Cosmo"
Mass 0.7 kg



Estonia, Latvia, Finland, Sweden, Norway

JONITINIS MAISTINIS SUBSTRATAS

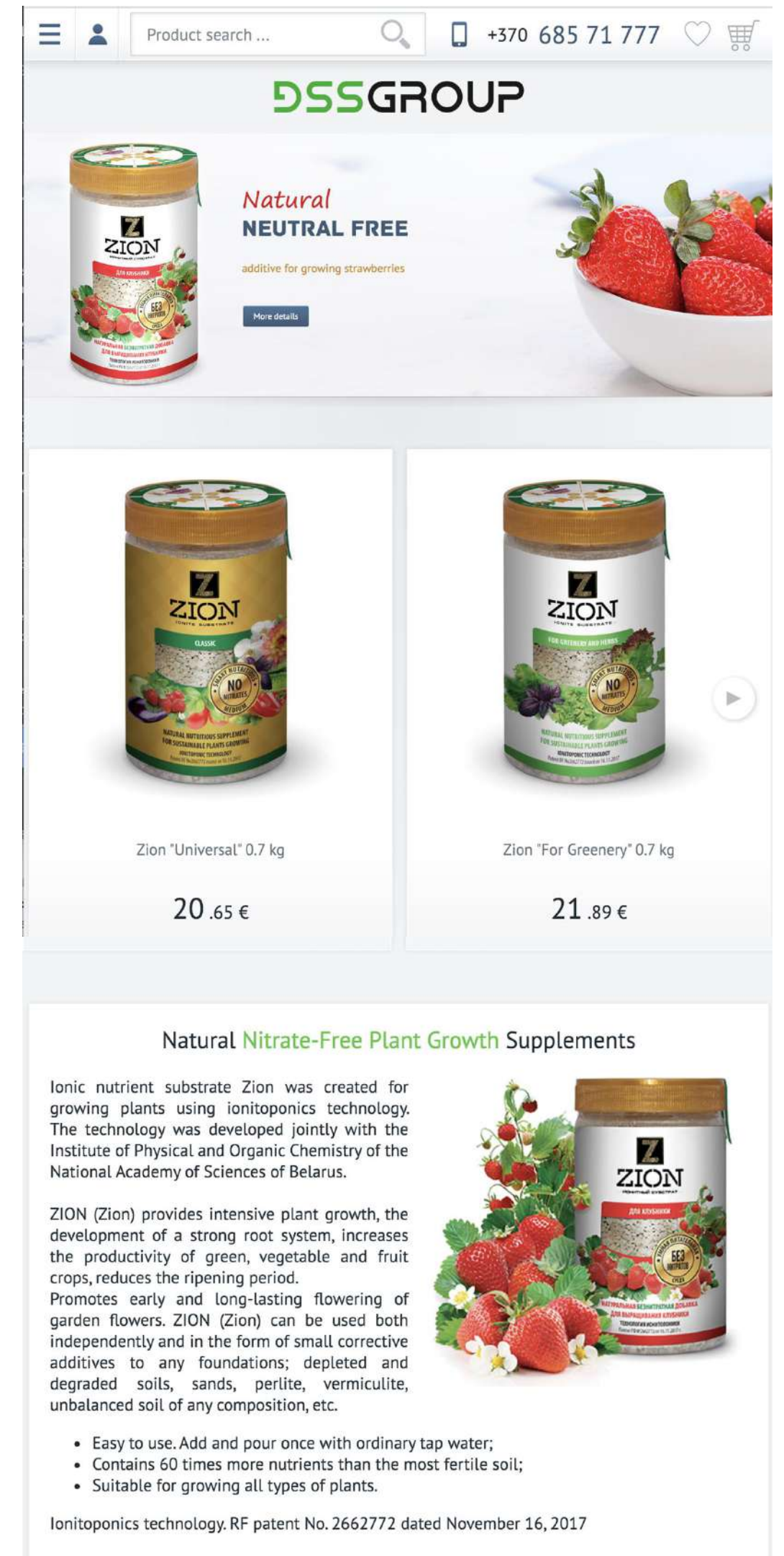
Natūralūs žemės papildai

BE NİTRATÜ!

 +370 685 71 777

 info@zion-europe.eu

 www.zion-europe.eu



Switzerland, Germany, Italy and Spain

JAU LIETUVOJE

natūralūs žemės papildai

Z

ZION

Jonitinis maistinis substratas

BE NITRATŲ!

ZION

UNIVERSALUS

BE NITRATŲ

NATŪRALŲ BE NITRATŲ AUGALŲ AUGINIMO PAPILDAS

ZION

COSMO

BE NITRATŲ

NATŪRALŲ BE NITRATŲ AUGALŲ AUGINIMO PAPILDAS

ZION

GÉLÉMS

BE NITRATŲ

NATŪRALŲ BE NITRATŲ AUGALŲ AUGINIMO PAPILDAS

strawberries

herbs

Key benefits

Classic ZION ionite substrate consists of 60 times more nitrogen, 28 times more potassium and 8 times more phosphorus than most fertile black soil.

User-friendly

No allergies or other negative effects on your family's health. (Even your child can use ZION).

Simple

ZION application is simple and doesn't require a Ph.D. in horticulture.

Environmentally friendly

100% natural material with no nitrates, pesticides, or hormones. You will not harm the environment by using ZION.

Magically productive

Increases your harvest due to balanced plant nutrition. Works in soil up to 3 years or 14 growing seasons.

Product search ...

+370 685 71 777

DSSGROUP

ZION

Natural NEUTRAL FREE

additive for growing strawberries

strawberries

ZION

CLASSIC

20.65 €

ZION

FOR GREENERY

21.89 €

Natural Nitrate-Free Plant Growth Supplements

Ionic nutrient substrate Zion was created for growing plants using ionitoponics technology. The technology was developed jointly with the Institute of Physical and Organic Chemistry of the National Academy of Sciences of Belarus.

ZION (Zion) provides intensive plant growth, the development of a strong root system, increases the productivity of green, vegetable and fruit crops, reduces the ripening period. Promotes early and long-lasting flowering of garden flowers. ZION (Zion) can be used both independently and in the form of small corrective additives to any foundations; depleted and degraded soils, sands, perlite, vermiculite, unbalanced soil of any composition, etc.

Easy to use. Add and pour once with ordinary tap water;
Contains 60 times more nutrients than the most fertile soil;
Suitable for growing all types of plants.

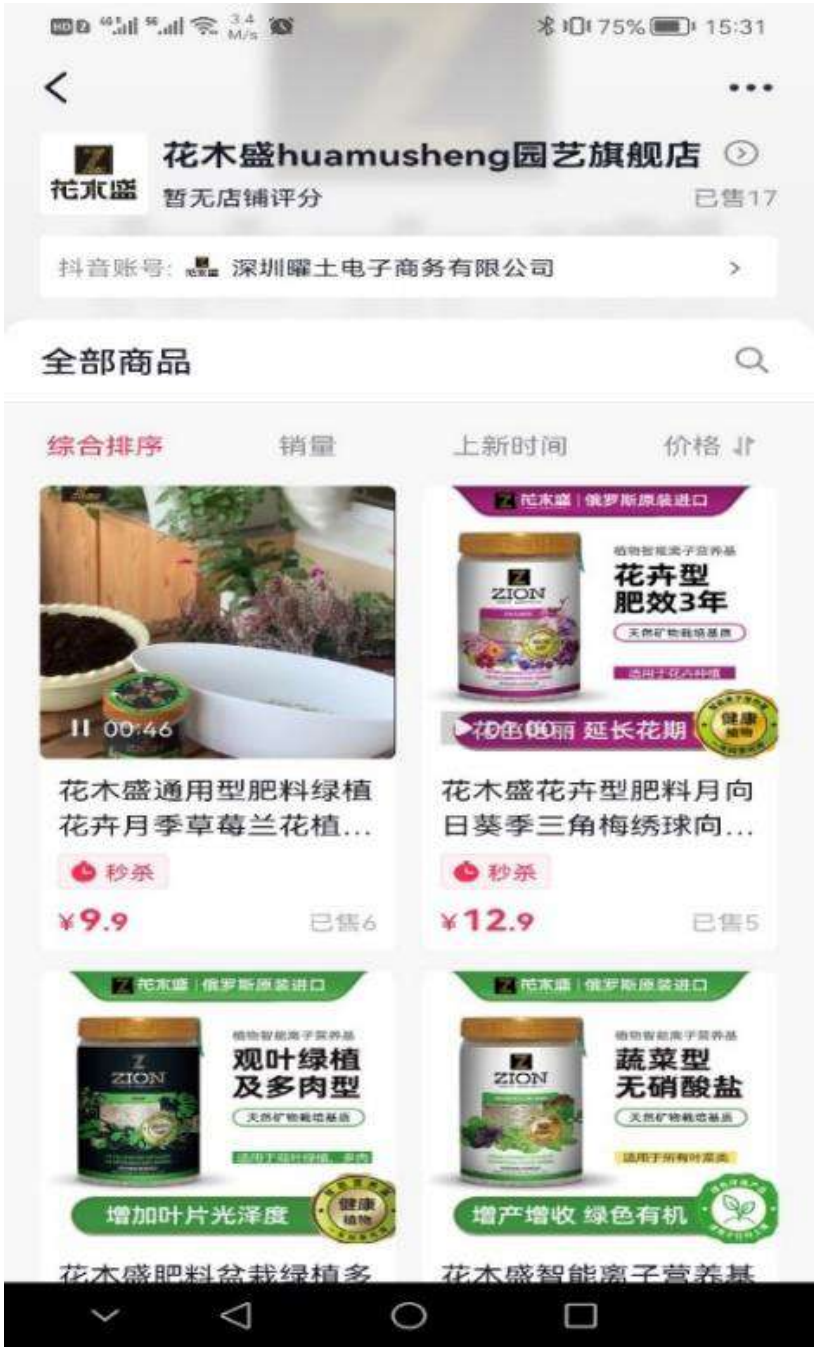
Ionitoponics technology. RF patent No. 2662772 dated November 16, 2017

Advantages

tree

leaf

Zion Cooperation in China



小红书

日常内容种草+外部达人推广

Zion Cooperation in China



The Landscape Expo Asia 2021 (Asia Landscape Design, Equipment & Suppliers Expo)

This was the second exhibition ZION attended after the brand launch in China.

ZION had a 9 sqm booth in the exhibition to demonstrate the brand and product.



Zion Cooperation in China



This was the third exhibition ZION attended after the brand launch in China.

ZION had a 9 sqm booth in the exhibition to demonstrate the brand and product.

This time, the Chinese brand name GengJi was first showed in an exhibition.



Zion Cooperation in China



公众号

日常内容发布+产品种草

**Wechat Official
Account**

Fans attracting campaign



小红书

日常内容种草+外部达人推广

Xiaohongshu

Content marketing, reading 5k+,
Like 50+, fans 1500+ ;
Koc promotion



抖音

对外达人推广卖货为主

Tiktok

- 1、50w+达人进行产品种草
- 2、百万级粉丝——我的慢生活后续进行纯佣推广
- 3、后续跟进付费达人

Zion Cooperation in China



Beijing Fanfan farm

The client owns a 400,000 m² farm, which is divided into green, organic and soilless cultivation areas.

The customer has tried ZION for Fruit for planting fig and lemon trees. They are expecting the test results at the moment.

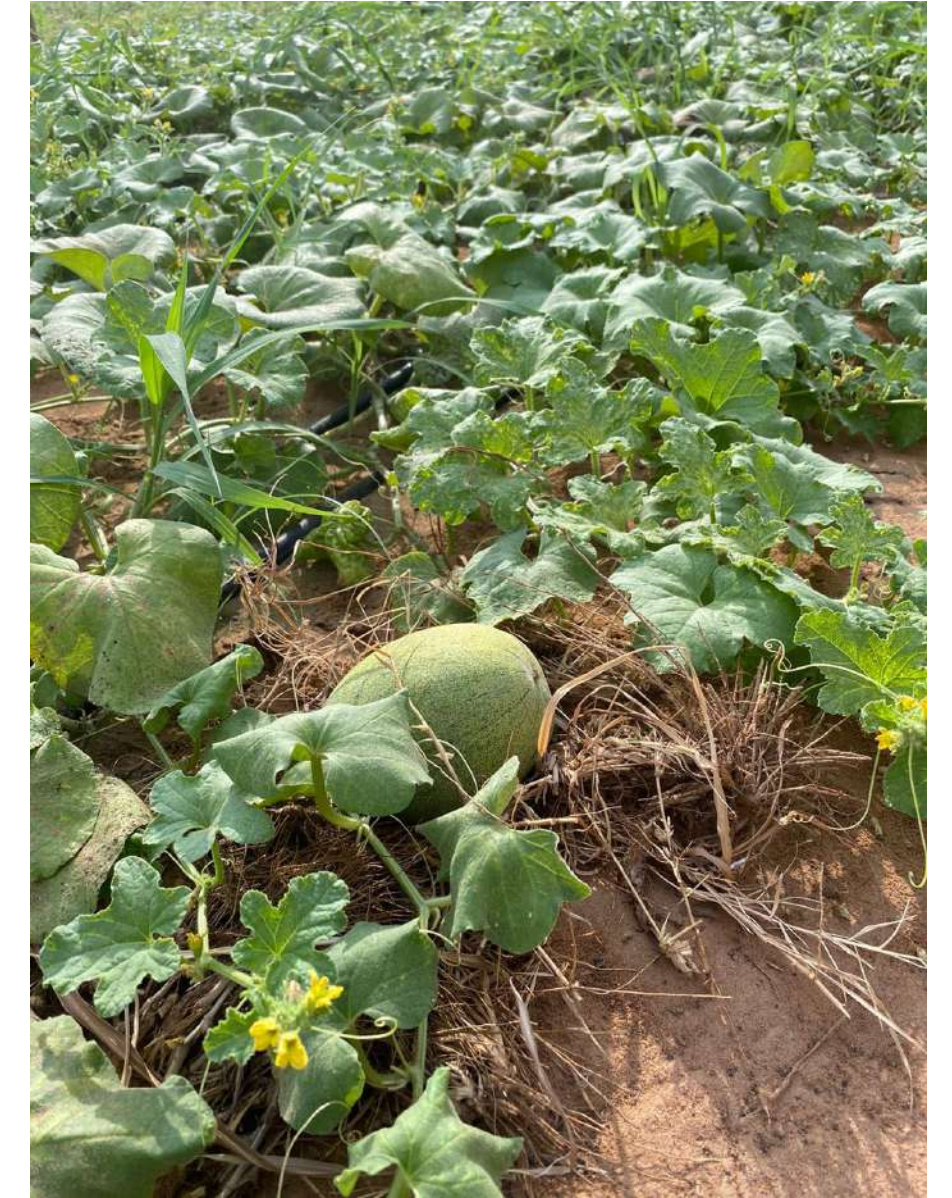


Dubai

United Arab Emirates

More than 18,000 plants were planted on land unsuitable for farming. At the time the seeds and seedlings were planted, the temperature was over 50° C and at times approaching 60° C.

When planting in desert sand, agroperlite and/or barren coconut peat was added to each hole to retain moisture, as well as 50 to 150 grams of ZION ionic substrate.



Zion Cooperation in Mongolia



National green initiative "1 billion trees"

Since May 2022 ZION participates in national program "1 billion trees" supported by Ministry of Natural Resources and Tourism of Mongolia. 1 billion trees are supposed to be planted within the program to stop Gobi desert expansion. Application of ionite substrates will save up to 90-95% of seedlings which are currently dying after transplantation to desert soil.





Contact details:

ZION RUS, LLC

Proektiruemii proezd 4062, 6/16

Moscow, Russia

Tel: +7 (495) 505-57-70

E-mail: info@zion-rus.com



THANK YOU FOR ATTENTION!



www.zion-rus.com/en



[@zion_rus_](https://www.instagram.com/zion_rus_)