BIOTORF

RETURNING TO THE ROOTS

DEVELOPMENT WITH PARTICIPATION
САРАТОВСКИЙ НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ ГЕНЕТИКИ, БИОТЕХНОЛОГИИ И ИНЖЕНЕРИИ ИМЕНИ Н.И. ВАВИЛОВА
РАЗРАБОТКА ПРИ УЧАСТИИ

BRICS 2024 RUSSIA

THE RUSSIAN BRAND

INNOVATIVE ORGANIC BIOSTIMULANT

ECO-TECHNOLOGIES OF THE FUTURE

as sustainable development and solution of global challenges

2025

BIOTORF
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СЕРТИФИЦИРОВАНО
BIO
CERTIFIED PRODUCT

AN INNOVATIVE NEW GENERATION BIOMELIORANT

Based on macro-, meso- and microelements with a high content of humic and fulvic acids.

ECOTECHNOLOGIES OF THE FUTURE

Processing of raw materials without participation chemical reagents

WASTE-FREE PRODUCTION

A completely new technological process

VERSATILITY OF APPLICATION

Maximum efficiency in all irrigation conditions

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PROTECTION AND RECOVERY

It works as a meliorant – it preserves the fertility of the soil, and with prolonged use it completely restores its properties. It is highly effective for use by farmers cultivating depleted and degraded lands, as well as lands located in areas of risky farming and in abnormal natural conditions.

- **OPEN GROUND**
  field, vegetable, industrial crops
- **CLOSED GROUND**
  greenhouses, seedling complexes
- **ALTERNATIVE SYSTEMS**
  hydroponics, aeroponics

Increasing plant resistance
to changing weather conditions
and temperature fluctuations

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AGGREGATE STATE OF THE SOIL

The composition contains everything necessary for active seed germination, plant growth and root system formation.

BALANCED COMPOSITION

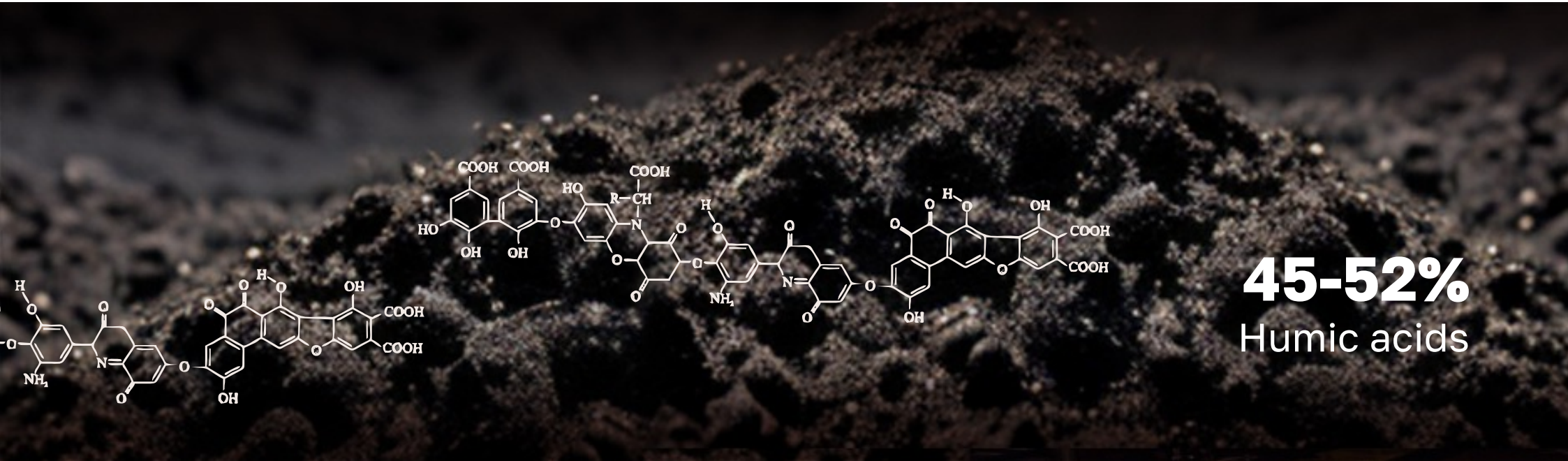
Full range of elements in ionic and chelated forms for each growth phase

BIOORGANIC HUMIC ACIDS

A standard created by nature: free of impurities of coal humates and other synthetic additives

VERSATILITY OF APPLICATION

Absolute compatibility with other preparations, safe integration into irrigation systems used



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LOGISTICS AND SHIPPING

Long shelf life - at least 36 months. When a small precipitate forms, it is easily mixed, returning the preparation to its original physico-chemical properties. Taking into account the unpretentiousness to the conditions of storage and transportation, the delivery of products is carried out by any means of transport.

- **QUALITY ASSURANCE**
  laboratory tests of each batch
- **AN ADVANTAGEOUS FORM OF TRANSPORTATION**
  supplies in the form of a paste-like consistency
- **PRESERVATION OF PRODUCT PROPERTIES**
  at low and high temperatures

Filling in any container (Eurocube, vials, cans, barrels), delivery by any type of transport

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APPLICATION TECHNOLOGIES (RECOMMENDATIONS)

PASTE-LIKE CONSISTENCY At the first stage, mix the paste in a ratio of 1 to 4 with water (1 liter of paste + 4 liters of water = 5 liters of concentrate). Next, dilute the finished concentrate with water.

CONCENTRATE Leaf processing: 1-3 times a week. Top dressing under the root – every 10 days. Soaking is done once. The number of treatments depends on the development and condition of the plants, as well as the external conditions.

Recommendations: Treat the first days daily, then reduce the frequency of watering. For example, vegetation treatment: daily for 5 days, then every 5-7 days. Root treatment is carried out once every 10 days. For example, 100 ml of Biotorf concentrate diluted with water (10%) under the root of the plant, without affecting the leaves.

SCIENTIFIC SUPPORT

- Expert support for the application of the Biotorfa product,
- field consultations on cultivation technologies,
- the development of individual application schemes for farms,
- the possibility of attracting specialists and conducting analyses,
- the introduction of new tillage systems.

10% **Root treatment, soaking of seeds, bulbs, cuttings**

1% **Vegetation treatment**

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RESEARCH - FIELD TESTING
20.06.2024 – 19.08.2024

UZBEKISTAN

COTTON. On farms of 5 hectares, a medium-fiber cotton variety C-8286 was planted with a row spacing of 90 cm. The average number of plants on each site was at least 112,000. The control plots for each region are about 2 hectares.

Sowing of seeds pretreated with a 10% Biot solution was carried out in dry soil.
The soil was also treated with a 10% solution. During the growing season, the treatment was carried out twice on the leaf with a 1% solution.

Despite the lack of rain and irrigation, the first positive effect of using Biotorf was noticeable
on the 7th day.

1-10% Solution of Biotorf

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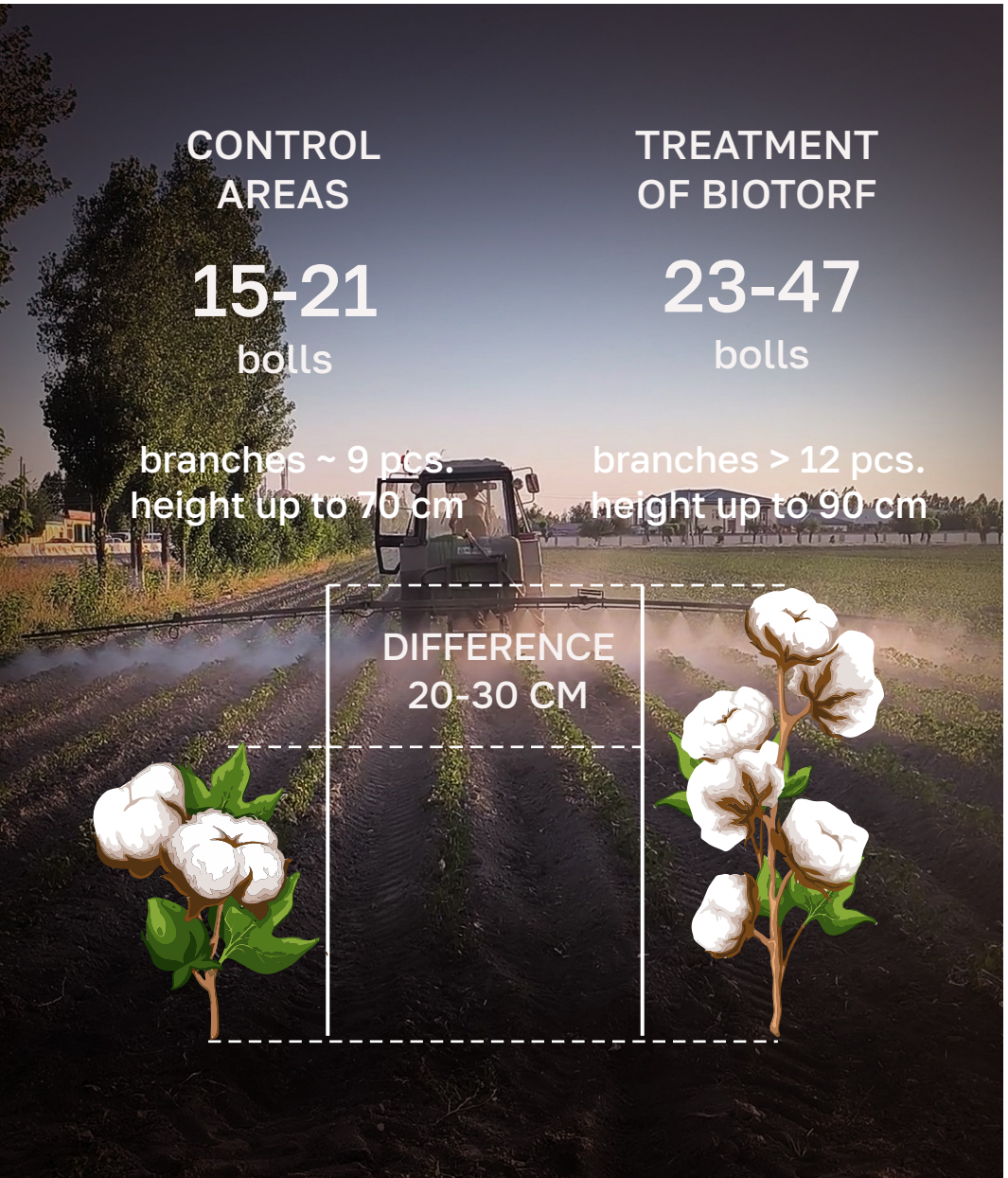
RESEARCH - FIELD TESTING
20.06.2024 – 19.08.2024



In the areas where Biotorf was used, the height of plants was up to 90 cm, the number of branches was more than 12, stems were more than 6.4, nodes were more than 4.7. The number of fruits is from 23 to 47 fruit boxes.

In the control plots, without the use of the preparation, the plant height was 20-30 cm less, the yield of branches was no more than 9, the number of knots was 1.1 less, the number of nodes was 1.2 less. The number of boxes in the control plots was 15-21 pieces.

The use of Biotorf accelerated the germination and germination of seeds, and the development of plants at all levels. during the growing season and increased the yield. Complex treatment with preparation allowed to increase yields

by an average of

+34°C

Average daytime temperature

Typical: drought, periods of abnormal heat

Returns SALINE LANDS to the category suitable for agriculture

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RESEARCH - FIELD TESTING

20.06.2024 – 19.08.2024

Area treatment with irrigation equipment

Processing by sheet 1% solution Biotorf

Tillage 10% solution, seed laying

Plant processing with a 10% solution under the root

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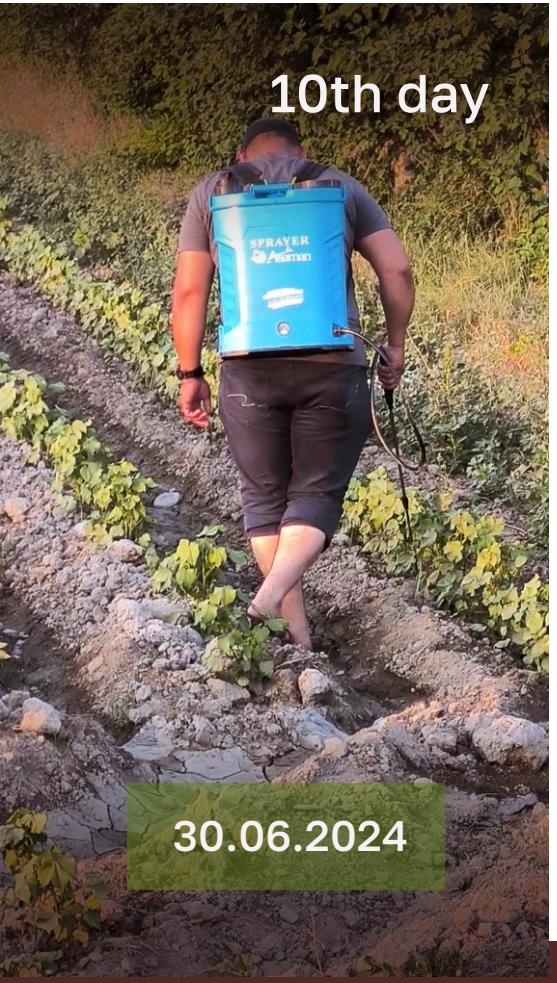
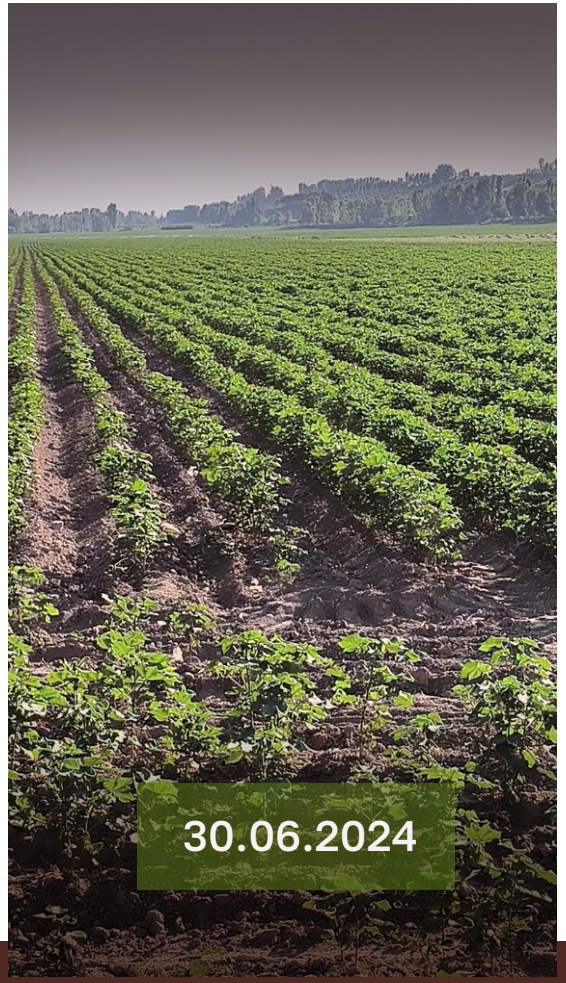
RESEARCH - FIELD TESTING

20.06.2024 – 19.08.2024



Leaf treatment with a sprayer



Early morning treatment 1% solution

Carrying out measurements of the treated plants and the control group

Processing in the evening 1% solution

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RESEARCH - FIELD TESTING

20.06.2024 – 19.08.2024

Measurement of plants planted additionally

Measurement of plants planted additionally

Plants treated with a Biotorf solution

The control group of untreated plants

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RESEARCH - FIELD TESTING
24.11.2024 – 31.12.2024

UGANDA

On November 29, seedlings were purchased in a double copy of the same size for further plant comparison. Soil before planting It was treated with a 10% Biot solution mixed with water (90%).

BANANA. For the first 6 days, bananas were treated daily on a leaf with a 1% Biotorf solution mixed with water (99%). Then there was a gradual decrease in the number of treatments – once every 6 days. Periodically, the root was treated with a 10% solution of Biotorf, 2 liters.

The first results were visible **on the 3rd day.**

The difference between the treated and control plants was about 5 cm.

The climate is tropical **High humidity**

+26°C Average temperature

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RESEARCH - FIELD TESTING

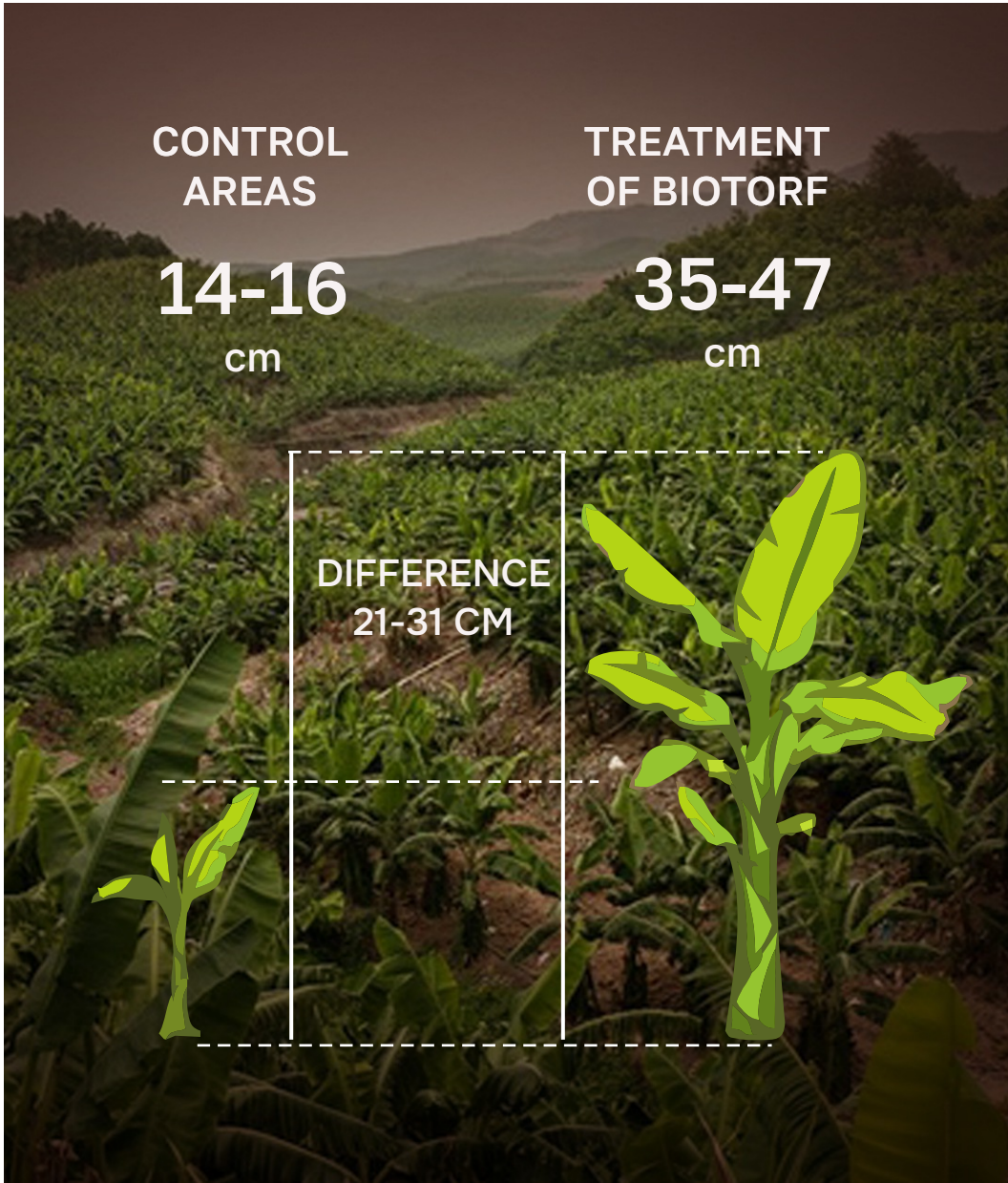
24.11.2024 – 31.12.2024

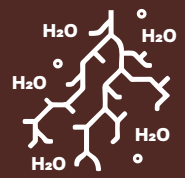
On the 8th day, the sprouts were measured. Height of plants treated with solution The bio-margin was 35 - 47 cm. Control plants, untreated: 14-16 cm. The difference in the height of the treated plants was two to three times greater than in the control.

The plant growth was 173%.

Agricultural crops, which are strategically important products for the development of the country, were selected for the study. Bananas are one of the main food products for domestic consumption as well as export.

The research was conducted jointly with representatives of the agricultural sector with the support of the Government of Uganda.





Expansion of the root network, increasing the water retention capacity of the soil

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RESEARCH - FIELD TESTING

24.11.2024 – 31.12.2024

Tillage
before planting
with a 10% solution

Planting
of treated seedlings
with a 10 % solution

Cutting leaves
for faster
rooting

Planting
banana
tree seedlings

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RESEARCH - FIELD TESTING

24.11.2024 – 31.12.2024

Measurements
of plants treated
with Biotorf solution

Measurements
of plants treated
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RESEARCH - FIELD TESTING

24.11.2024 – 31.12.2024

CONTROL GROUP

CONTROL GROUP

CONTROL GROUP

CONTROL GROUP

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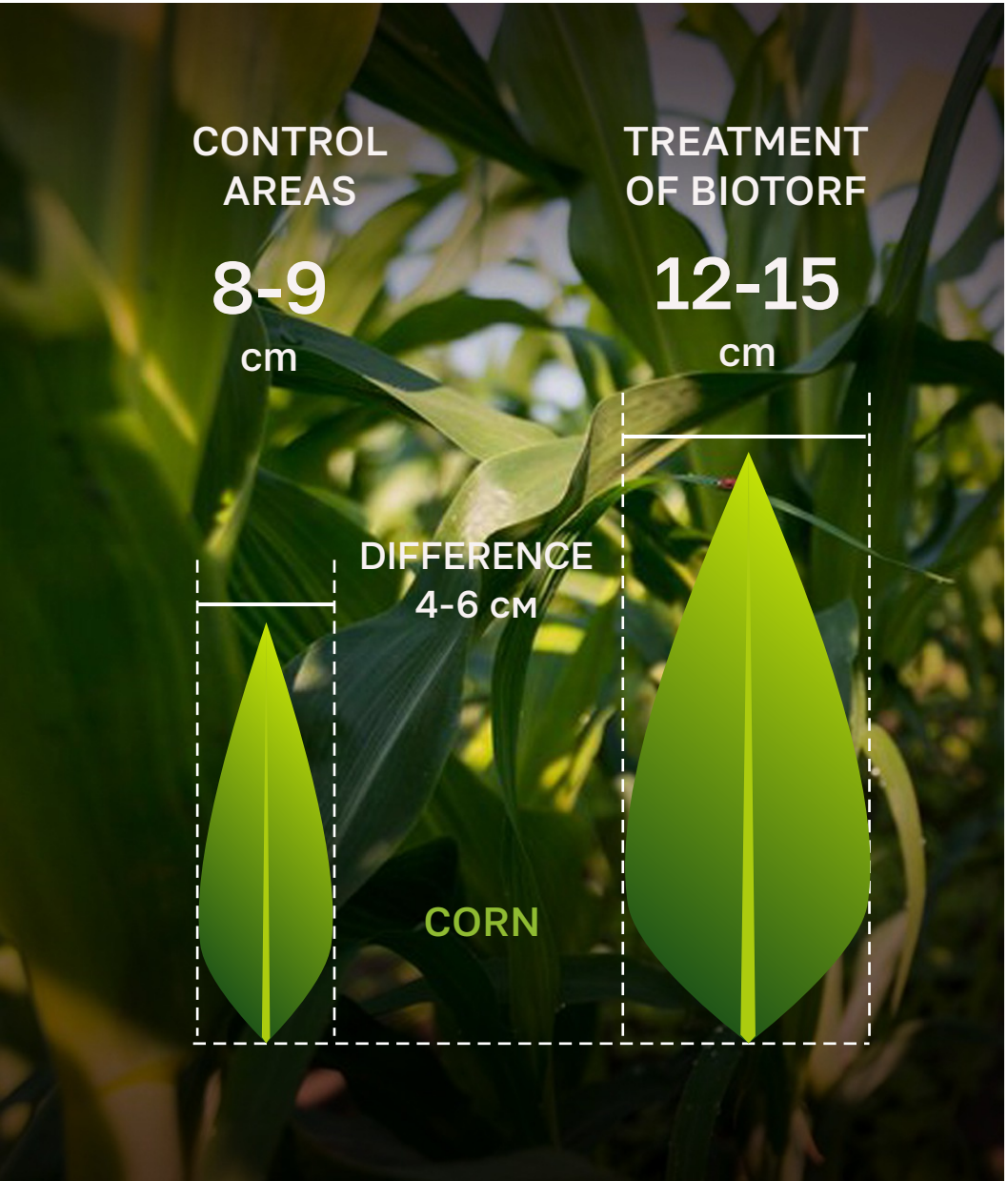
RESEARCH - FIELD TESTING

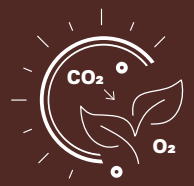
24.11.2024 – 31.12.2024



COFFEE. The first days are active tillage with a 10% Biotorf solution. The difference on the 8th day: plants treated with a solution of Biotorf appeared 4 new sheets. Control plants, not treated: leaves were missing.

CORN. Identical tillage with 10% solution and 1% Biotorf solution per leaf. The first 6 days are daily, then with a decrease in sprays. The leaves of the plants treated with the solution were 12-15 cm wide. Each plant has increased in height, and the leaves have a rich color. Leaf width control plants that have not been treated, It was 8-9 cm . The increase in treated plants was 59%.

AVOCADO. Tillage with 10% solution and 1% Biotorf solution per sheet. On the 8th day the first 4 leaves appeared. The control plants that were not treated with the solution only had buds, and the leaves were missing.



Activation of growth processes, increasing the efficiency of photosynthetic reactions

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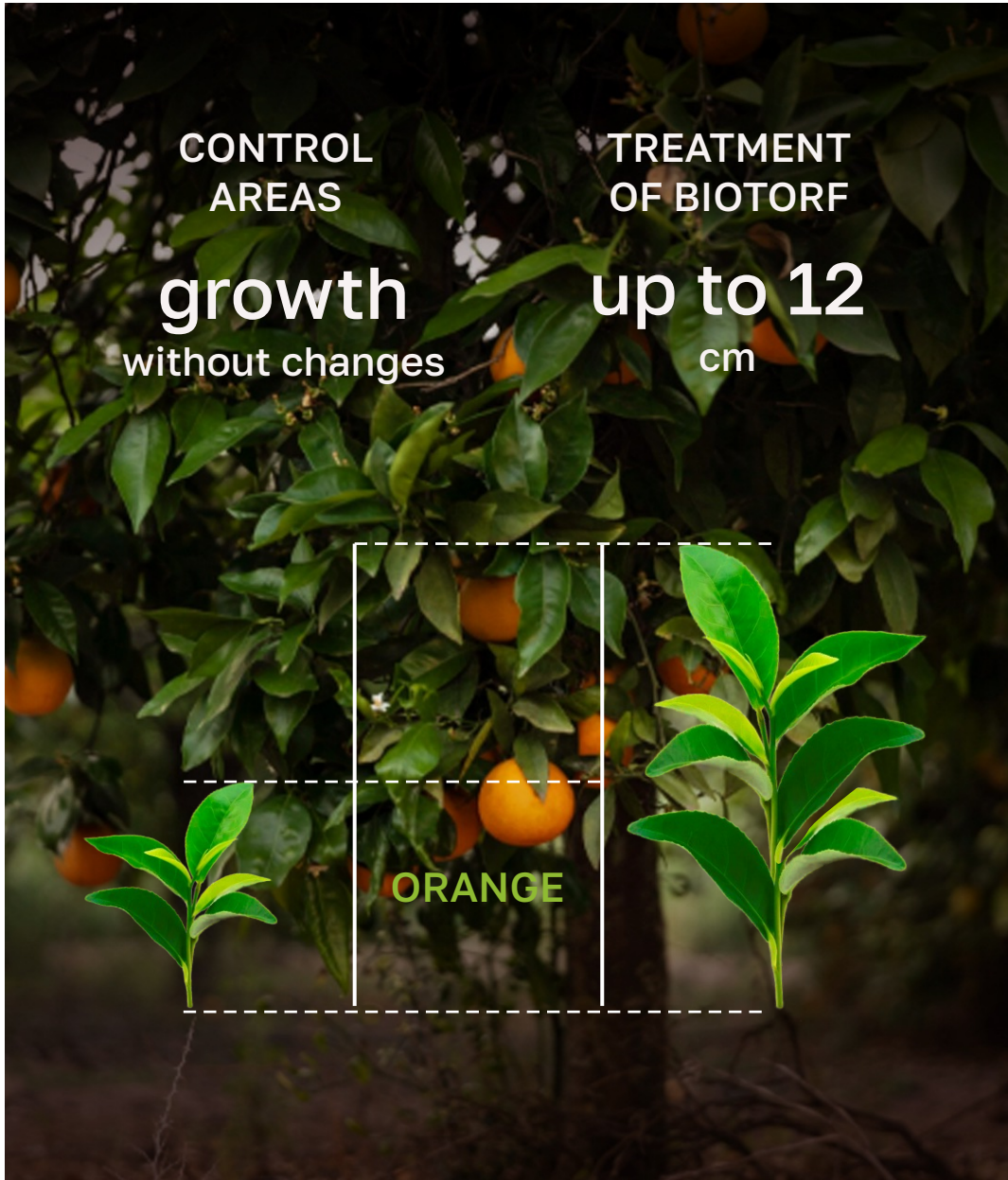
RESEARCH - FIELD TESTING

24.11.2024 – 31.12.2024

POMEGRANATE. Tillage with 10% solution and 1% Biotorf solution per sheet. On the 8th day, a large number of flowers appeared, and the first fruit also appeared. Control plants not treated with the solution: no changes occurred.

ORANGE. Tillage with 10% solution and 1% Biotorf solution per sheet. Accelerated growth was observed on the 8th day. New leaves began to form, the length of the twigs was up to 12 cm. Control plants that were not treated with the solution: there were practically no changes.

MANGO. Tillage with a 10% solution and 1% Biotorf solution per sheet. On the 8th day the appearance of 6 new leaflets was noticed, the growth of the sprout was 4 cm. Control: swelling, absence of new leaves.



Saturating the soil
with nutrients and strengthening the imm
system of plants

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RESEARCH - FIELD TESTING

24.11.2024 – 31.12.2024

An avocado seedling treated with a Biotorf solution

Leaf measurements corn treated with a Biotorf solution

General appearance of the stem corn treated with a Biotorf solution

A coffee seedling treated with a Biotorf solution

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RESEARCH - FIELD TESTING

24.11.2024 – 31.12.2024

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RESEARCH - FIELD TESTING
12.04.2024 – 03.10.2024

EQUATORIAL GUINEA

PAPAYA. On April 16, 2024, the first treatment of papaya trees selected for further analysis was carried out with a 1% Biotorf solution mixed with water (99%). Further, such treatments were carried out for 6 consecutive days to saturate the plant with nutritional properties. Further spraying was carried out with a decrease in the frequency of treatment – once every 6-10 days, depending on the condition of the plants.

An agricultural crop relevant for export, papaya, was selected for the study. Research objectives: the possibility of reduction fruit ripening, increasing fruit quantity, increase the shelf life of fruits for transportation.

+28°C Average temperature

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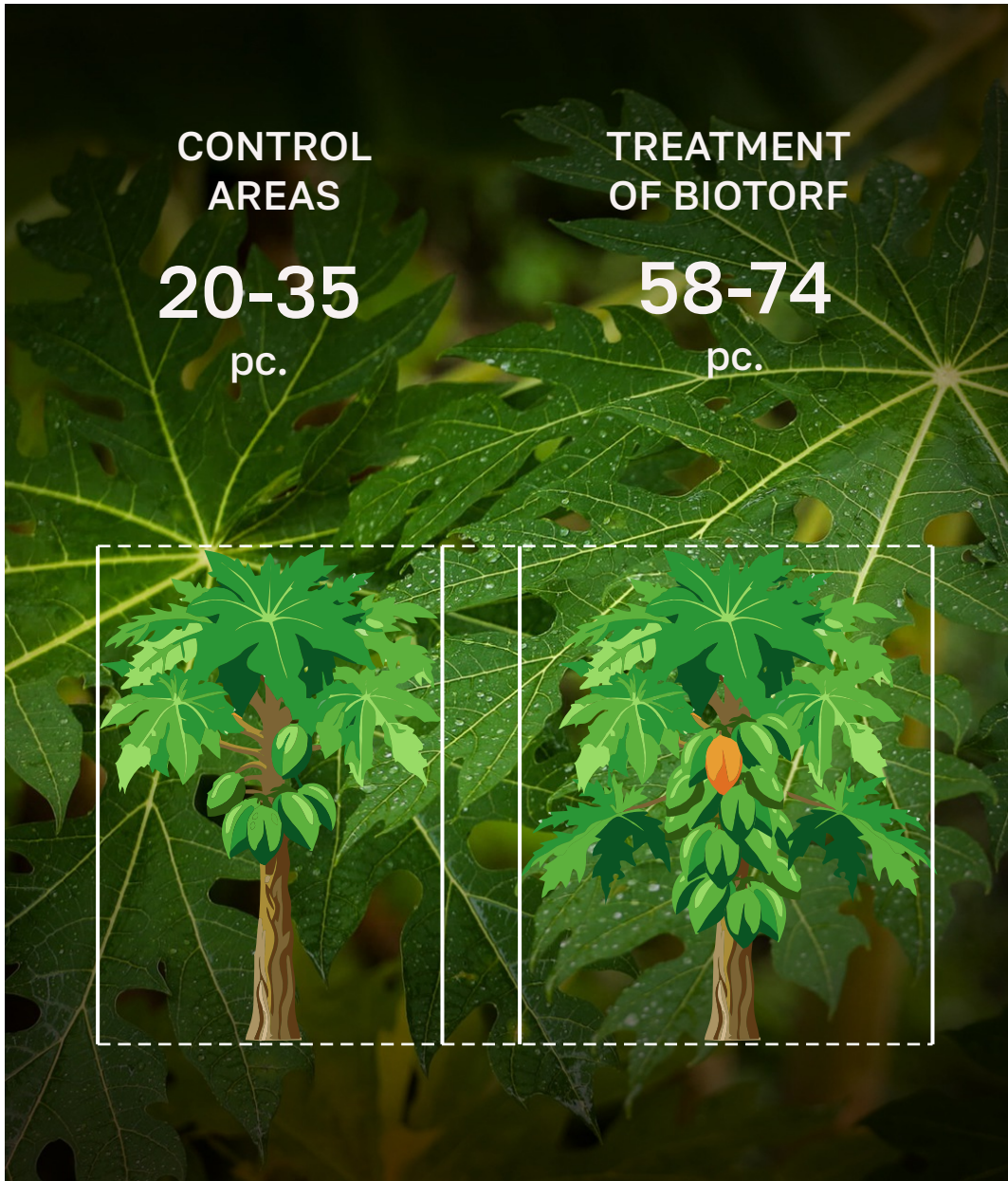
RESEARCH - FIELD TESTING
12.04.2024 – 03.10.2024

On the 6th day, an increase in the number of ovaries of fruits was found, on the 31st day stable growth and increase in size, recorded on the 45th day there is a significant difference with the control plants.

Number of fruits processed wood Biotorf, amounted to **58-74 pieces.**

A strong coupling of the fruit with the tree was noted – there was no fruit dumping, as usual, this happens in the late stages of maturation. This indicates that the tree is saturated with proper nutrition and elements, which is also confirmed by the size of the leaf plate – the leaf was increased by one and a half to two compared to the control plants. Accelerated growth of new leaves was noted and branches, increasing the stability of the plant to the stressful effects of climatic factors. Tasting of the fruit revealed a pronounced shade, taste and aroma.



Reduction of fruit ripening time, increase in quantity and improvement of taste qualities

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RESEARCH - FIELD TESTING
12.04.2024 – 03.10.2024

Spraying
papaya trees
1% solution

Spraying
papaya trees
1% solution

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papaya trees
1% solution

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12.04.2024 – 03.10.2024

Tasting of the fruits of the processed tree

Intermediate results of Biotorf treatment

Intermediate results of tree growth

Intermediate results of tree growth

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RESEARCH - FIELD TESTING

12.04.2024 – 03.10.2024

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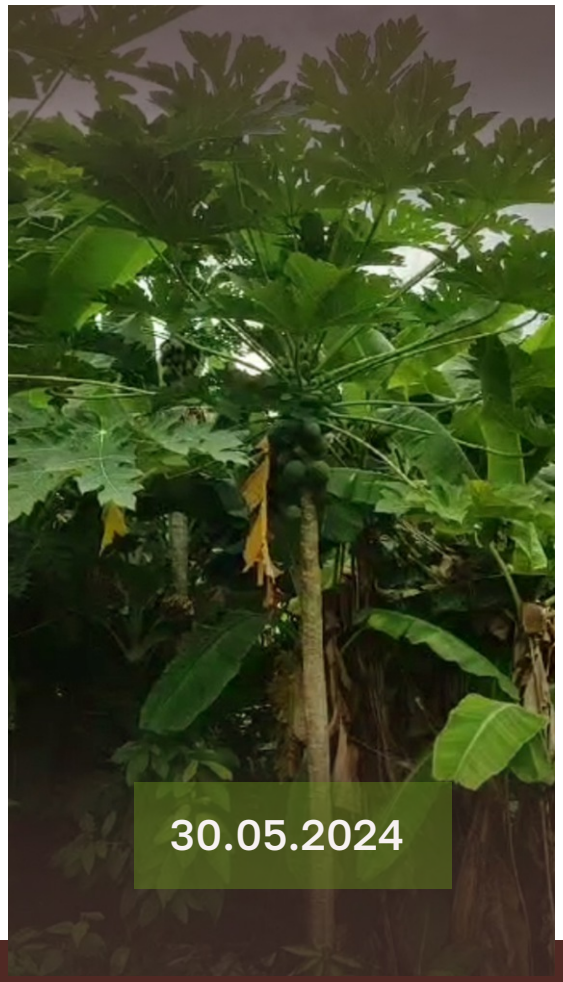

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