

Concentrated Liquid Soil Solution (CLSS)

Earth Juice™

Eco-friendly microbiological solution acting as a substitute of the chemical fertilizers and pesticides



Earth Juice™ : field of application

Agriculture

- ▶ A growth-stimulating substance (substitute of agrochemicals);
- ▶ Protection from the plant pests;
- ▶ A substance for the soil fertility recovery;
- ▶ A substance for the organic's, animals' and birds' waste conversion into black soil (eco-chernozemic soil).

Oil Development

- ▶ As a substance for drilled cuttings and oil sludge treatment into productive soil;

Environment

- ▶ A growth-simulating substance for the lawn grass and urban parks;
- ▶ As a substance for the cleaning of muddied pieces of water;
- ▶ As a promoting agent for the soil fertility (near highways, at the waste dumping grounds and in the industrial areas);
- ▶ A substance for the conversion of silty mud from the urban waste treatment facilities.



Agriculture

Features of the Earth Juice™

- ▶ 30% increase in rate of plant germination and growth;
- ▶ Accelerates ripening process;
- ▶ Recovers the natural soil productivity;
- ▶ Defends from pests (aphis or green-flies, colorado beetle etc.) by the strengthening of the plant immunity to the diseases;
- ▶ Increases vitamin content in the plants;
- ▶ More than two times increasing yield of biofuel;
- ▶ Allows to reduce over 50-70% usage of chemical fertilizers during the first year;
- ▶ Fully substitute chemical fertilizers from the second year of usage.



Agriculture

Application

- ▶ Earth Juice™ application does not depend on the type of plant and soil condition (the most important is the quantity of the solution);
- ▶ Earth Juice™ fertilizes by the spraying method;
- ▶ Commonly Earth Juice™ is blended with the non-chlorinated water in the ratio 1:50;
- ▶ Standard nozzles can be used for the spraying;
- ▶ The damaged surface of the plant should be sprayed with the concentrated solution for about a week in case of plant disease;
- ▶ Blended solution can be prepared a day before usage.



Agriculture

Usage of Earth Juice™ for different type of the plants

Type of works and plants	Water blend ratio	Earth Juice™ consumption	Method and time of the treatment
Crops and wheat	1:50	40 liters of EJ for 10 000 m2 per year	Spraying soil before seeding, after sprouting, before blooming and after harvesting
Corn	1:50	40 liters of EJ for 10 000 m2 per year	Wetting four times a year (10 liters per 10 000m2): before seeding, after sprouting, before blooming and after harvesting
Potato	1:10	2 liters of EJ per 1 tone	Spraying seeding material
	1:50	30 liters of EJ for 10 000 m2 per year	Wetting three times a year (10 liters per 10 000m2): after sprouting, before blooming and after harvesting
Beetroot	1:50	20 liters of EJ for 10 000 m2 per year	Wetting two times a year (10 liters per 10 000m2): before seeding, after sprouting
Ornamental plants	1:50	0,02 liter of EJ for 1m2 per year	Transplanting, seeding
Preparing of seeds	1:1	0,1 liter per 1 kg of seed grains	Water steeping for two hours
Soil fertility recovery	1:50	50 liters of EJ for 10 000 m2	Wetting in spring
	1:50	50 liters of EJ for 10 000 m2	Wetting in autumn
Fruit trees	1:50	0,1 liter per 1 m2	Jar method while blooming and ripening
	1:1	-	Spraying in spring during while flower bud appearance or while fruit blossom
Transplant seedings	1:50	0,1 liter per 1 m2	Apply EJ in the seedbeds. Wetting of the root system while blooming and ripening
	1:1	-	Top-dressing: spraying 3-5 days after planting, spraying while blooming and after fruit blossom
Berries	1:50	0,1 liter per 1 m2	Root system: wetting while blooming and while fruit blossom
	1:20	-	Top-dressing: spraying while blooming and while fruit blossom
Plant diseases	1:10	-	Spraying damaged surface. Repeat this process if necessary



Agriculture

Results obtained

- ▶ Wheat productivity can reach 100 hundreds kilograms per hectare without using any chemicals;
- ▶ 30-50% increasing in corn cob size;
- ▶ 40-60% cost cutting for chemical fertilizers and pesticides for the first year and no chemicals from the second year;
- ▶ 100% eco-friendly solution leads to 100% eco-friendly products;
- ▶ 20-30% increasing in soil fertility during the first year of Earth Juice™ using.



Agriculture

Organic wastes treatment

- ▶ Earth Juice™ can process all organic wastes of livestock and poultry farms into high quality black soil (eco-chnozem or humus);
- ▶ Best practice for the organic waste processing of the poultry farm is the following: chicken manure and organic filler (such as peat or infertile soil) are mixed at a temperature range of +5 C to +40 C, and sprayed with Earth Juice™ in the process of mixing at the rate of 20 liters per 1m³. After about 3-4 days, the mixture becomes a high-quality black soil.



Treatment of oil sludge and drilled cuttings

- ▶ “HomoBioCycle” LLC is the developer and owner of technologies for processing of oil sludge and drilled cuttings into ecofriendly soils.
- ▶ Peat or organic waste are usually used for the treatment of drilling cuttings and oil sludge. The proportion is 60% of oil sludge and 40% of soil (peat or organic waste). Earth Juice™ should be added to the resulting mixture at the rate of 1 to 70. After 40 days the mixture will become fertile soil.



Treatment of oil sludge and drilled cuttings

Currently “HomoBioCycle” LLC provides the following services for the oil companies :

- ▶ creates a community of microorganisms-destroyers of oil sludge and drilling cuttings;
- ▶ modifies a concentrated liquid soil solution for a specific type of sludge and cuttings;
- ▶ supervises the treatment process.



Environment

Landscaping and gardening

- ▶ Earth Juice™ can be used as a microbial growth stimulator for the grass and ornamental plants. Earth Juice™ speeds up the process of germination by 30-40% and allows the plants to remain attractive longer;
- ▶ Earth Juice™ is used with water dechlorinated water (5-20% solution);
- ▶ A regular equipment is suitable for the watering of the plants;
- ▶ Earth Juice™ also allows to clean urban waterways from a putrid smell and from blue-green algae.



Environment

Treatment of organic wastes

- ▶ Earth Juice™ gets rid of the characteristic odor in the organic waste fields. It's enough to spray 2% solution at the rate of 20 liters per 1 hectare;
- ▶ If the task is to further utilize already existing layer of organic waste, it is necessary to fill the top 5 cm of soil (peat or infertile land) and then, apply Earth Juice™ (1 liter per 1m³) and blend the top layer and organic waste;
- ▶ Another technology of “HomoBioCycle” LLC allows to turn organic waste into an effective fertilizer. It is necessary to install the faucet, to mix 50% of the organic waste and 50% of any local soil. In parallel you need to apply Earth Juice™ at the rate of 1 liter per 1m³ of mix. Finally, the resulting mixture should be laid out in the open air. In a month the mixture can be used as organic fertilizer at planting;
- ▶ Earth Juice™ gets rid of all kind of organic waste smell in 1-2 hours.



Environment

Soil recovery at the urban zones

- ▶ The technology of “HomoBioCycle” LLC allows to solve the problem of soil recovery at the urban organic waste dumps, along highways and at the industrial areas;
- ▶ It is necessary to create a separate project for each case taking into account the specifics of contamination, their volume, etc., but the technology remains similar: to blend a mixture of organic waste with peat or infertile soil, to spray Earth Juice™ for the subsequent conversion of the mixture due to the action of microorganisms.



Characteristics of Earth Juice™

- ▶ In 2011 Russian Federal Service for Veterinary and Phytosanitary Surveillance successfully tested Earth Juice™ to meet the requirements of international standards;
- ▶ In 2011-2013 Earth Juice™ was successfully tested for various agriculture plants by different russian certified agriculture laboratories such as Pryanishnikov's Agrochemical Research Institute, Soil Science Department of the Moscow State University and Timiryazev's Agriculture Academy;
- ▶ The analysis illustrated that the microbiological data of Earth Juice™ entirely corresponded to the hygienic and safety requirements made to biological fertilizers. There were not found any pathogen organisms in the solution. The microbe complex participated in the production of Earth Juice™ is presented by the wide circle of the aerobic and anaerobic gram-positive and gram-negative bacteria, as well as microscopic fungi (heterotrophic, oligotrophic, butyric-acid, carbohydrate-oxidizing, oligonitrophilic, nitrifying, denitrifying, cellulolytic and others). That confirms that Earth Juice™ contains a great quantity of the different biologically active substances (proteins, enzymes, antibiotics, amino acids, peptides, fatty acids, vitamins, poly- and oligosaccharides and many other compounds) of microbe origin. Their totality determines the marked growth-stimulating, antibacterial and protective properties of the concentrated liquid soil solution Earth Juice™.



Additional info

Production

- ▶ “HomoBioCycle” LLC currently fabricates CLSS Earth Juice™ and biohumus (EcoChernoZem™) at its own factory in Moscow, Russia;
- ▶ Total capacity volume is 20-25 thousand liters of Earth Juice™ per month and 10 tones of biohumus (EcoChernoZem™) per month. Total capacity can be increased till 400-500 thousand liters and till 100 tones of biohumus in two months.

Intellectual property

- ▶ The company holds a patent for the invention of “Biotransformation method of oil sludge and drilled cuttings processing” and holds patents for the Earth Juice™ and biohumus (EcoChernoZem™) production;
- ▶ Earth Juice™ and biohumus (EcoChernoZem™) are registered trademarks.



About us

- ▶ The “HomoBioCycle” company was founded in 2010. Nowadays, the company widely uses bioprocessing in its work. Earth Juice™ and biohumus (EcoChernoZem™) production technology is based on the work of Russian scientists who have devoted their careers to studying of soil features;
- ▶ Using our products, professional farmers and livestock owners can increase biomass yield, accelerate ripening process, decrease the use of fertilizers and pesticides and restore the fertility of the soil;
- ▶ Bioprocessing is a technology for recycling of organic wastes in high quality biohumus (effective organic fertilizer) or fertile soil mixture, identical in microbiological composition to the virgin black soil or chernozem. Bioprocessing technologies are totally natural and let us grow the 100% eco-friendly products like fruits, vegetables, corn and wheat.

