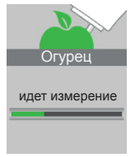
Процесс измерения

Рис. 1

Рис. 2



На экране отобразится норма для выбранного продукта (рис.1) в мг/кг. Далее введите щуп прибора в измеряемый продукт и нажмите «OK» или стрелку «Вправо» (далее).
В процессе измерения (рис.2) на экране отобразится шкала загрузки.

Результат

Рис. 1

Рис. 2

Рис. 3

После измерения на экране отобразится числовой результат измерения и рекомендация к употреблению продукта:
«Содержание нитратов в норме» (рис.1) - продукт безопасен к употреблению;
«Незначительное превышение нормы» (рис.2) - продукт не желательно употреблять в больших количествах, особенно детям и пожилым людям;
«Значительное превышение нормы» (рис.3) - употреблять продукт не рекомендуется.

English

Nitrat-tester Soeks

Purpose

Nitrat-tester SOEKS is designed for express analysis of fresh fruit, vegetables and meat for nitrates.

Nitrate content analysis is based on conductivity of alternating high-frequency current the measured food items.

Base kit

Nitrat-tester SOEKS has the following items included in the base kit:

Nitrat-tester Soeks	1 pcs
Passport	1 pcs
2 batteries (AAA size)	2 pcs
Rigid paperboard box	1 pcs

The manufacturer reserves the right to add new features to the device. Please follow new code modifications on the official website: **www.soeks.ru**. The device's code can be modified only in the manufacturer's service centers.

Principle of nitrat-tester operation

Nitrat-tester Soeks is intended for a primary express assessment of the nitrate ion content of fresh fruit and vegetables.

The principle of nitrat-tester Soeks operation is based on measuring the electric conductivity of fruit and vegetable medium. Each fruit and vegetable contains potassium, magnesium, iron, copper and chlorine ions required for their vital functions as well as many organic acids and other substances in certain concentrations required for their normal development. The content of each concrete substance (in the form of ions or molecules) is determined by biochemistry of the concrete plant (there exists a base level of ion content) and composition of water and soil, on which it grows. Fertilizer is very often used to secure an effective plant growth – for example, fertilizer in the form of salts (nitrate, phosphate, and other fertilizer). Nitrates or phosphates are dissolved in water, and reach the plant, which willingly absorbs them in the form of salt ions. The salt ions (nitrates, phosphates, etc.) spread across the plant, and are accumulated in various parts of the plant, including fruit, which increases electrolyte content and, accordingly, electric conductivity of the fruit/vegetable medium. Thus, we can use nitrat-tester Soeks to measure the electric conductivity of fruit and vegetables, to compare this value with electric conductivity due to the base level of ion content, and to say that that the product under test contains an increased amount of ions with a certain probability. Since nitrate fertilizer is widely spread in Russia and CIS countries, one may expect with a high degree of probability that excessive electric conductivity is due to the presence of nitrate ions.

Nitrat-tester Soeks is calibrated by nitrate ion content. Their concentration in fruit and vegetables is determined using an independent test method (potentiometric determination of nitrate ions per GOST 29270-95 (Fruit and Vegetable Processing Products. Nitrate Determination Methods). The results obtained have been used to download a number of dependences of the measured electric conductivity on nitrate ion concentration determined for various fruit and vegetables with due regard to their base electric conductivities in nitrat-tester Soeks.

Nitrat-tester Soeks delivers the result of express test in the form of nitrate ion concentration and compares is with the maximum permissible concentration for the measured product.

The device measures the concentration of nitrates in milligrams per kilogram of the product.

For adults it is safe to consume 200-300 mg of nitrates per day. Dozes over 600 mg of nitrates per day are dangerous to consume.

Example:

- While measuring of beetroot the result is 1000 mg/kg. It is a normal result for beetroot but it is safe to consume no more then 0.2 kg of this beetroot per day.
- While measuring of watermelon the result is 350 mg/kg. If you will consume 2 kg of this watermelon, you will get a nitrates poisoning.

Remember that the result obtained is an estimate, and it cannot replace a quantitative chemical analysis in a specialist chemical laboratory, which is not free of charge and requires time. However, the presence of such laboratory and a qualified chemist/analyst at home or in the pocket during each purchase of fruit, vegetables or berries is impossible for the majority of people, while the presence of nitrat-tester Soeks allows one to refuse the purchase of suspicious foodstuff, and to significantly secure oneself and relatives, especially children. Such analysis made using nitrat-tester Soeks is performed in a few seconds, and the only thing the device needs for a long-term operation is that you do not to forget to change the batteries or to recharge accumulators as a usual cellular telephone.

Certainly, the question may always arise: what if excessive electric conductivity of a foodstuff is due not to nitrate ions? Such situation is possible, but will the buyer feel easier if he or she has bought a foodstuff with an increased phosphate (or other ion) content instead of nitrates or simply a foodstuff that started to spoil? Remember that base electric conductivity was determined for each individual type of fresh fruit and vegetables while the composition and concentration of organic acids vary during rotting.

Specification

Range of indicated nitrate content, mg/kg	from 20 to 5 000
Measuring time, seconds	up to 20
Accuracy	+- 15%
Power elements	AAA size batteries rechargeable or non-rechargeable (NiMH)
Power voltage range, V	2,3 - 3,5B
Time of continuous work of the device, hours at least**	8
Overall dimensions height x width x thickness, max, mm	144x47x17
Weight (without power elements), max, grams	66
Battery charging current, max, mA	300
Current consumption from charger or USB not more than	500
Output charger voltage	from 4,5 to 5,5
Display	Color TFT, 128x160
Operating temperature range, °C	from -20 to +60

Comment:
* Increasing the number of measurements shall improve the reliability of readings.
** The time of continuous work of the device is up to 10 hours, with default settings and two batteries of capacity 1350mAh.

Precautions

Before using the product, please read carefully the safety measures below and strictly observe them when using the product. Violation of these rules may cause malfunction or cause total failure of the product. The manufacturer's guarantee shall be void if the safety measures stated below are violated.

- Protect the product from shock and other mechanical impacts that can damage it.
- Do not use the product in conditions of high humidity, under or in contact with water: the product is not waterproof.
- Do not leave the product in places with intensive sun light or high temperatures for a long time, this can cause electrolyte leakage from power elements, failure of the product, and injuries.
- Do not leave the product for a long time near devices that generate strong magnetic fields, such as magnets or electric motors, and where strong electrical magnetic signals are generated, such as transmitter towers.
- Do not perform measurements close to cell phones and microwaves, this may affect the instrument's readings.
- Do not disassemble and do not try to repair the device on your own.
- Do not connect the device to a PC or socket while it has regular batteries installed.
- Strictly observe polarity when you install power elements, otherwise the device may overheat and fail.

Product	Norms
Apple	60
Apricot	60
Banana	200
Beet	1400
Cabbage early	900
Cabbage late	500
Carrot early	400
Carrot late	250
Cucumber soil	150
Cucumber gr.	400
Eggplant	300
Grapes	60
Greengrocery*	2000
Pear	60
Lettuce*	2000
Marrow	400
Melon	90
Nectarine	60
Onion Bulb	80
Onin Green*	600
Peach	60
Peper Sweet	200
Persimmon	60
Potatoes	250
Radish Black	1000
Radish Garden	1500
Strawberry	100
Tomato soil	150
Tomato gr.	300
Watermelon	60
Baby Norm	50
Fresh Meat	200

*To measure nitrates in greengrocery you have to grind it to homogeneous substance.

Warning: it is only possible to measure fresh products.

Manufacturer's warranty

The manufacturer guarantees efficient operation of the device provided that the user observes the operating conditions, safety measures, and requirements to storage and transportation described in this manual.

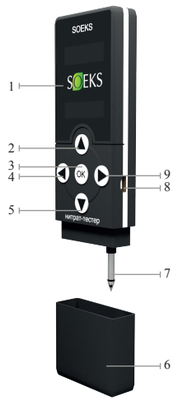
The warranty period for the device is 12 months after the device is purchased through a retailing network; in case of direct sales distribution, the warranty period begins after the ultimate user receives the device. If any malfunctions are detected in the device, the warranty period shall be extended for time during which the device is under warranty repairs and the ultimate user is unable to use the device.

We recommend that you read carefully the instructions presented in this manual before contacting the warranty repair service.

Please send all your comments to our e-mail addresses at our official website: www.soeks.ru, telephone +7(495)223-27-27 or mailing address: 127566, Moscow, Altufyevskoye Shosse, 48, k.1, office 301. Warranty repairs are done at the manufacturer's factory.

This guarantee shall be void if:
- the serial number of the device is not the same as the number in the guarantee coupon;
- the guarantee coupon is not available or illegible because of damage, corrections or erasures;
- requirements to shipment, storage and operation described herein are violated;
- malfunction is caused by third party actions or a force majeure;
- the device or its component parts has signs of shock or other mechanical impact (scratches, cracks, chips, loose parts inside the case, color spots on the display, etc.);
- malfunctions are caused by foreign objects, liquids and insects inside the device;
- the user does or attempts to disassemble and repair the device.

Appearance of the Device



1. - Color TFT display
2. - Button [UP]
3. - Button [OK]
4. - Button [BACK]
5. - Button [DOWN]
6. - Protective cap
7. - Measuring probe
8. - mini-USB
9. - Button [ENTER]

Button [OK] – turn the device on/off, confirmation in nitrat-tester mode.

Button [ENTER] – confirm selection.

Button [BACK] – back to previous menu.

Button [UP] – moving up in the menu.

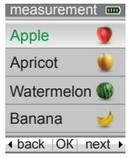
Button [DOWN] – moving up in the menu.

Graphic interface description

Main menu

To start measurement please choose "Measurement" menu item in the main menu.
Choose "Powersave" and press "OK" or right arrow button to switch powersave mode ON/OF. In this mode item will turn to a sleep mode after 1 min of standby.

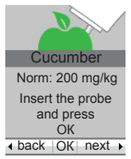
Measurement



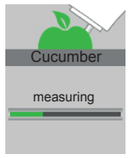
In the "Measurement" menu choose measuring product from the list and press "OK" button. To return to the main menu, press left arrow button on the keyboard.

Measuring process

Pic. 1



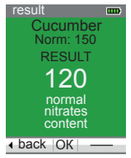
Pic. 2



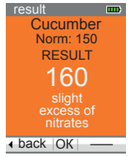
You will see the norms in mg/kg for the choosen product on the next screen (pic. 1), Insert the probe to the measuring product and press "OK" button on the keyboard. While measurment you will see the process bar on the items creen (pic. 2).

Result

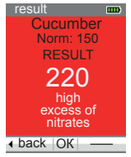
Pic. 1



Pic. 2



Pic. 3



When the measurement is compleat item will display numeric result and one of three possible working messages.

«Normal nitrates content» (pic.1);
«Slight excess of nitrates» (pic. 2);
«High excess of nitrates» (pic. 3).

Ассортимент приборов компании "СОЭКС"

Экотестер"Соэкс"
Имеет 2 функции. Измерение нитратов в свежих овощах и фруктах и оценка радиационного фона и обнаружение предметов, продуктов питания и строй материалов, зараженных радиоактивными элементами.

Индикатор электромагнитных полей «Импульс»
Индикатор электромагнитного поля «Импульс» предназначен для контроля норм электромагнитной безопасности - обнаружения и локализации зон магнитного и электрического полей. «Импульс» имеет возможность определения направленности электромагнитного поля.

Дозиметр "Quantum"
Новейшая разработка компании «СОЭКС». Поступил в продажу в марте 2013 года и является флагманом среди линейки дозиметров компании.
Предназначен для оценки уровня радиоактивного фона, обнаружения предметов, продуктов питания, строительных материалов зараженных радиоактивными элементами.

Новый дозиметр «SOEKS 01M» 2014 года
Новый «SOEKS 01M» измеряет накопленную дозу радиации, имеет новый графический интерфейс. Отличительной особенностью является многократное увеличение времени непрерывной работы от 28 до 500 часов. Дозиметр выполнен в корпусе «soft touch».

SOEKS products line

Ecotester "Soeks"
It is a multifunctional device designed to estimate the radioactive level, detect objects, foodstuffs, construction materials contaminated with radioactive elements, as well as measuring nitrates level in foodstuff.

Indicator of electro-magnetic fields "Impulse"
The indicator of the electromagnetic fields "Impulse" is designed to control electromagnetic safety standards - the detection and localization of areas of magnetic and electric fields. "Impulse" is able to determine the directivity of the electromagnetic field.

Dosimeter "Quantum"
The latest development of the SOEKS company. It was launched in March 2013 and is the flagship product of dosimeter product line. It is designed to estimate the radioactive level, detect objects, foodstuffs, construc-tion materials contaminated with radioactive elements.

New dosimeter "SOEKS 01M" 2014
New "SOEKS 01M 2014" can measure
accumulated dose and it has new grafic interface. Main advantage is the increased battery life time from 28 hours up to 500. It has a "soft touch" enclosure.