In general, the issue of the Russian vodka image revival is not an easy one and requires considerable financial resources. In our opinion, it is nevertheless solvable. We believe that in addition to commercial, advertising and other issues, the technical solution of the problem requires, at least, the following:

1. Vodka quality medical and biological and physical and chemical analysis.
   1.1. Selection of foreign and Russian vodka brands for the expertise.
   1.2. Alcohol extraction from the vodka specimens.
   1.3. Alcohol and vodka medical and biological analysis.
   1.4. Specimen physical and chemical analysis on the base of item 1.3 results.
2. Obtaining of initial data for solving the alcohol analysis problem and developing technology, which ensures alcohol production with the improved medical and biological indicators.
3. Development of the stage-by-stage strategy for producing the alcohol with the improved quality and with optimal economic indicators, which aims at diminishing energy consumption, losses, etc.
4. Strategy development for commercial implementation of the optimum technology of water preparation for vodka production.
5. Strategy development for vodka production with improved medical and biological indicators.

In our opinion, expenditures required for the Russian vodka image revival will be repaid with interest. The revenue, which could be obtained from sales of such vodka, would be of great help for our state.

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Use of the STEL–60–03 Device in Dairy and Meat Processing Industry

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Possibilities and conditions of the neutral anolyte (ANK) use at the dairy and meat-processing plants are discussed.

Key words: Neutral anolyte, disinfectant, equipment, instruments, concentration.

Lately a trend has been observed of launching small businesses which produce baby dairy products and other baby food products. Disinfectant solutions are also used in small shops and laboratories of large dairy and meat-processing plants for manual disinfecting of the instruments, containers, accessories, and laboratory glass. Consumption of disinfectants by such consumers is insignificant, and, because the disinfectant manufacturers are located at large distances,
disinfectant supply is complicated. Storing large quantities of disinfectants is not justified for both safety and economy reasons.

Industrial testing of the disinfecting solution (anolyte) generated by the STEL-type devices showed that, using a small-dimension device, the required amount of disinfectant may be produced at any time with relatively low consumption of the electric energy and chemicals (table salt).

In 1997, the Department of the State Sanitary and Epidemiological Control of the RF Ministry of Health allowed for use in the dairy and meat-processing industry the disinfecting agent “Neutral anolyte ANK” produced by the STEL-60-03 device (Report No. 114, dated April 21 and 22, 1997, of the Federal Committee for Medical and Immunology Biological Compounds, Disinfecting and Cosmetic Substances of the State Sanitary and Epidemiological Control of the RF Ministry of Health).

The neutral anolyte ANK obtained by the electrochemical effect on the sodium chloride aqueous solution features antimicrobial properties with respect to the mesophilic aerobic and facultative anaerobic microorganisms, bacteria of the *E. Coli* group, bacteria of genus *Proteus*, bacteria of genera *Salmonella* and *St. Aureus*. The ANK is a colorless liquid with the chlorine odor containing highly-active oxygenchlorine compounds. The STEL-60-03 device generates the neutral anolyte ANK (hereinafter referred to as anolyte) with the content of the active chlorine 420 mg/l (deviations are permitted in the active chlorine concentration within the limits ±20 mg/l) and the hydrogen indicator (pH) from 7.6 to 7.9 pH units.

For disinfecting various equipment, instruments, accessories, and containers in the dairy and meat-processing industry it is recommended to use anolyte solutions with the content of chlorine:

- 105 ± 15 mg/l, for 10 minute exposure;
- 145 ± 15 mg/l, for 5 minute exposure.

For generating working disinfecting solution of the required concentration, tap water with the temperature of 10 to 25°C shall be poured into the vessel, and the concentrated anolyte shall be added in the required proportion. Using warmer water for dilution is inexpedient, since it results in transformation of the active hypochlorites into non-active chlorates. Diluted (working) solutions shall be used only once.

The initial anolyte shelf life equals 24 hours, provided it is stored in closed glass, plastic or enameled vessel at room temperature in places protected from the direct daylight. In presence of impurities of organic origin (meat fat, protein) the anolyte activity decreases.

Large-dimension technological equipment (belt transporters, extruders, etc.) shall be preferably disinfected in a mechanical way with the ANK disinfecting solution recirculation in the “equipment-pipeline” system and also manually by
multiple application of the anolyte working solution to the treated surfaces using brushes and bristle-scourers and ensuring, during 15 minutes, its uniform wetting. Small-dimension technological equipment (hand-held extruders, extensions, etc.) shall be disinfected by complete immersion into the anolyte working solution for 15 minutes. For residual anolyte removal after disinfecting the items shall be rinsed for no less than 3 minutes with potable water. Complete ANK washing out shall be monitored by titration and absence of the chlorine odor. The disinfecting quality is determined by taking washing samples from the treated equipment surface (microbiological analysis for bacteria of the *E. Coli* group and total bacterial contamination).

Use of the STEL-60-03 devices in the dairy and meat-processing industry showed that electrochemically activated solution, anolyte, generated in these devices can satisfy the enterprise demand in disinfecting solutions in the amount from 400 to 1,500 liters per day.

At the same time, the used STEL-type devices feature some shortcomings: the process of the anolyte dilution requires sufficiently long time because preliminary monitoring of active chlorine content is necessary in concentrated and working solutions, as well as exact measurement of the vessel capacity. In view of this, currently it is expedient to develop devices producing cleaning and disinfecting solutions in the active chlorine concentration range from 50 to 150 mg/l with the production capacity from 60 to 500 l/hour, which will allow more productive use of the STEL-type devices in the dairy and meat-processing industry.


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Wide practical use of ECA in various branches of industry and medicine is discussed.

**Key words:** Electrochemically activated water, production technological regimes, medical equipment.

During 1998, a series of experiments was carried out for ECA application in various branches of industry. The obtained data are not unambiguous, and fur-