In the Soviet Union carbon dioxide (CO2) using in the food technology started first in the world. Therefore, in search of an answer to these questions the authors of this paper used the pioneering research of Russian scientists - Professor N. A. Komarov, the author (1932) method of cooling and freezing plant and animal origin raw materials in carbon dioxide, and Engineer B. S. Alaev, who proposed (1933) to use liquefied gas as extracting agents and essential and fatty oils. For the period 1933-1950 include the publication and copyright certificates for inventions and designs specific technological solutions in these areas.

Subsequently, numerous studies by Russian scientists have provided extensive experimental data on the properties of carbon dioxide in all phase states, with regard to the critical area, as well as in the area of high pressure over the critical point. Thus, it had accumulated a substantial body of domestic data, which allowed to consider the possibility of further development and expansion of the CO2 technologies - processing.

Taking stock of the accumulated scientific and practical experience in the field of food processing and refrigeration technologies and the possibility of applicability of the various working bodies, the authors of this paper recognize carbon dioxide as the most promising working medium, characterized by industrial purity, non-toxic, cheap and non-deficient, and proceeded to the specific implementation of individual issues problems since 1973. Abroad, practical research on the model and pilot installations for the extraction (in the United States, France, Germany) for the brewing industry began during the 1978-1982 period, the release of single jet of gas-dynamic cooling began in 1991 (in Germany, Japan, Italy, USA) to concentrate juices, produce "snow ice".

Pilot production of CO2-extracts since 1965 organized the pilot plant in Krasnodar Research Institute of Food Industry (KNIIPP).

In 1980, the plant was put into operation the extraction of vegetable raw material liquefied gases in Krasnoarmeysky farm-factory of Krasnodar region with capacity up to 1 thousand tons of raw materials a year.

In Russia, research on new technologies of production and application of the essential-oil extracts and aromatic plant materials, using as liquid carbon dioxide solvent were launched in 1960 in the All-Union Scientific Research Institute of natural and synthetic fat substitutes (Shebekino Belgorod region.) . The undisputed priority in this area belongs to the Russian engineer B.S.Alaev (1933), the theoretical background which developed and continued domestic scientists and experts.

Since 1965, studies on the subcritical CO2 extraction were continued in the Krasnodar Research Institute of Food Industry (KNIIPP). Under the leadership of AV Pehov and IJ Ponomarenko, with the participation of LG Aleksandrov, VD Berezin, SF Bykov, MM Derluguian, NF Dyubankovoy, GA Krasivskaya, GI Kasyanov, AN Katyuzhanskoy, JS Meepova, AF Prokopchuk, VY Senichev, EA Shaftan made experimental, design and pilot projects that are proven technological and economic feasibility of producing CO2-extracts of spices.

In a relatively short period of CO2-extracts are widely used in various sectors of the food industry instead of dry natural spices.

During the period of market reforms in Russia appeared 20 departments and enterprises for the production of CO2-extracts.

Theoretical development of technology and equipment for CO2 extraction participants performed scientific and pedagogical school of agricultural processing liquefied and compressed gases, led by Professor of Kuban State University of Technology Kasyanov Gennady Ivanovich.