

**CLASSIFICATION AND SPECIFICITY OF HERBAL MEDICINE
TECHNOLOGY**

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Annotation: *Herbal medicine (from the Greek Φυτόν - plant, θεραπεία - treatment), herbal medicine is a method of treating and preventing diseases of humans and animals, based on the use of medicinal plants. The terms "herbal medicine" and "herbal remedies" were first used in the early 20th century by French physician Henri Leclerc (1870–1955). In Russian language literature, the term "herbal medicine" is found, used as a synonym for herbal medicine. A specialist in the field of herbal medicine is called a phytotherapist. A person who collects medicinal herbs and knows how to use them is called an herbalist or healer. Many plants synthesize substances that are useful for maintaining the health of humans and animals. These include, in particular, aromatic substances, the majority of which are phenols and their oxygen-substituting derivatives, such as tannins. Many substances are secondary metabolites, of which at least 12,000 are isolated—an estimated number representing less than 10% of the total. In many cases, these substances (in particular, alkaloids) act as defense mechanisms of plants against microorganisms, insects and herbivores. Many of the herbs and spices people use to flavor food contain beneficial chemical compounds.*

Key words: *water separations, grinding fineness, untreated water, swelling coefficient, product arrangement, concentration difference, temperature effect, molecular diffusion, ordinary diffusion.*

INTRODUCTION.

History of herbal medicine. The oldest evidence of the use of herbs as medicine was discovered in archaeological excavations in what is now Iraq, Sumer. Doctors from Sumer already knew that many plants had healing properties, and used them to prepare all kinds of infusions and powders. For compresses and poultices, healers collected needles of coniferous trees and young leaves of willow. The leaves were thoroughly dried and then ground. Plant powder was often mixed with crushed minerals and animal powders, and diluted with beer or wine. It is known that the treasury of the first Russian Tsar, Ivan the Terrible, contained several books on herbal medicine. One of them is the Herbal Book of 1534, which is a translation from a printed edition in Lübeck of 1492. The book was a reference

book on treatment with medicinal plants, stones and other natural materials. It may have been translated from the German by the personal physician of Vasily III, Nikolaus Bülow (Nikolai Nemchin), after the Moscow prince fell ill following a hunt. Some prescription medications are based on herbal remedies, including artemisinin, digitalis, and quinine. Many herbal medicines are available without a prescription and are widely used by the population, such as breast elixir, lespephlan, hophytol and others.

Side effects and complications of herbal medicines. Medicinal herbs and other herbal remedies are much more trusted by some of the population than synthetic drugs ("chemicals"). Many people are confident that the "naturalness" of herbal medicines, the "naturalness" of their origin, as well as the long history of using herbal medicines in folk medicine can serve as a guarantee of their safety and effectiveness. Thus, in the United States, from 1993 to 2012, the number of herbal medicine products on the market increased tenfold. Experts, on the contrary, note that the potential dangers and side effects of herbal medicines should not be underestimated. Plants contain hundreds of biochemical ingredients, the effect of which on the body, both individually and in combination, is often unknown; the complex mechanism of action of herbal medicines is difficult to study in detail. In addition, the composition of plants is unstable and can be greatly influenced by changing soil composition, external sources of pollution, etc. The advantage of synthetic drugs, even originally discovered in plants, is that their composition is constant, and researchers do not have to deal with unknown or unstudied impurities. The long history of use of a certain herbal medicine in folk medicine does not guarantee its safety. An example is the story of Kirkazon (Aristolochia), a plant that is actively used in Chinese traditional medicine as a remedy against excess weight, dysentery, skin diseases, hypertension, tuberculosis, hemorrhoids and even snake bites. Dietary supplements with aristolochia were at one time very popular in Europe. However, medical studies have shown that the main active ingredient of Kirkazone, aristolochic acid, has a significant nephrotoxic effect. People taking drugs containing aristolochic acid may develop upper urinary tract cancer at any time. In 1992, an outbreak of carcinomas was described in more than 100 patients at a "weight-loss" clinic in Belgium who were prescribed a mixture of Chinese herbs, the main one being kirkazone. 70 victims required dialysis, surgery or a kidney transplant, and several died. In 2013, it was noted that Taiwan, where Kirkazone supplements were widely used (Chinese healers recommended taking Kirkazone supplements for about a third of Taiwan's population), had the highest rates of upper urinary tract cancer in the world. Another example is sassafras. This plant has been widely used in American Indian folk medicine and Chinese traditional medicine to treat a variety of ailments. However, studies have proven that the safrole content of sassafras essential oil is

a carcinogen. In the 1960s, the U.S. Food and Drug Administration banned the use of saffron oil for food purposes.

CONCLUSION.

Many plant foods have hepatotoxicity. In particular, the National Poison Information Service review contains data on 785 cases of adverse reactions, presumably or definitely associated with herbal medicines, observed during the period 1991-1995; the most common adverse reaction among them was hepatotoxicity. According to another study of 1,500 people taking Chinese herbal medicines, a twofold increase in alanine aminotransferase activity was observed in 1% of cases.

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