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HERBAL REMEDIES: A SOURCE OF BIOACTIVE COMPOUNDS

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Abstract: Approximately a third of all medicinal preparations are made from plants or with the participation of substances of plant origin. It is more economical to extract the synthesis of some chemical compounds contained in plants and determining the therapeutic effect of a drug from plant raw materials. It has been established that in a number of cases, the therapeutic effect of plant preparations is determined not only by the main active substance, but by the entire complex contained in it, including sugars, mineral salts, and microelements.

Keywords: medicinal plant, method, alkaloid, glycoside, treatment, herbal medicine.

INTRODUCTION

In recent decades, despite the large number of synthetic drugs used in modern veterinary medicine and medicine, interest in traditional medicine has not disappeared, but, on the contrary, has been revived, which is to some extent explained by the increase in allergic reactions to taking synthetic drugs.

It is known that the use of herbal products is primarily due to their high biological activity. Natural chemical compounds, as a rule, have a less harmful effect on the animal and human body than their synthetic analogues and substances with an artificially created structure, and this, in turn, allows them to be used for therapeutic and prophylactic purposes for various animal diseases.

MATERIALS AND METHODS

The chemical composition of plants began to be studied around the end of the 17th century, and at the end of the 19th century, some alkaloids, glycosides, tannins, saponins, flavonoids, various organic acids, vitamins, fatty and essential oils, trace elements and other.

The most important biologically active substances of plants include the following: alkaloids, glycosides, saponins, bitter substances, flavonoids, tannins, resins, essential oils, organic acids, mineral salts and vitamins.

In different types of plants, alkaloids accumulate unevenly. Plants from the nightshade and poppy families are especially rich in these substances. The toxicity of many plants is due to the presence of large amounts of alkaloids. In small quantities they have a healing effect. The most important alkaloids are: caffeine, atropine, strychnine, cocaine, echinopsine, berberine, platyphylline, etc.

RESULTS AND DISCUSSION

The action of glycosides is mainly determined by their non-sugar part. In their pure form, glycosides are usually crystalline, easily soluble in water and alcohol, substances with a

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bitter taste. During storage, they are quickly destroyed by the enzymes of the plants themselves under the influence of high temperatures, acids, alkalis and other factors.

There are cardiac glycosides, anthraglycosides, saponins, bitter substances close to glycosides and others.

Cardiac glycosides are found in plants such as foxglove, lily of the valley, spring adonis, strophanthus, obulinum, etc. They have an effect on the heart muscle and are widely used in veterinary medicine.

Anthraglycosides have a laxative effect on animals. They are found in brittle buckthorn bark, laxative buckthorn fruits, rhubarb roots, senna and sabur leaves. Anthraglycosides are low-toxic and stable during storage.

Plants containing saponins are used in veterinary practice as expectorants, diuretics, choleretic, and tonics. Many of them have a beneficial effect on the cardiovascular system, are effective against vascular atherosclerosis, etc.

Bitter substances are found in wormwood, gentian, dandelion, centaury, calamus and other plants. These substances stimulate the secretory function of the gastrointestinal tract, as a result of which they are used to improve digestion.

The richest in flavonoids are plants from the legume, umbelliferous, ranunculaceae, and asteraceae families. Flavonoids have various pharmacological activities. Thus, P-vitamin substances increase the strength of capillary walls, participate in oxidation-reduction processes, help relax vascular spasms, heal wounds, etc. A number of flavonoids are used for liver and kidney diseases, especially stones. Flavonoids include flavones, flavonones, xanthines, etc.

Tannins are widely distributed in almost all plants; they are found mainly in the bark and wood of trees and shrubs, and in the above-ground parts of herbaceous perennial plants. The total amount of tannins in plants can reach 10 - 30%.

In veterinary practice, plants containing tannins (bergenia, burnet, bird cherry, horse sorrel, oak bark and others) are used for gastrointestinal disorders, poisoning with heavy metals and alkaloids, as astringents and bactericidal [1].

Essential oils are found in various parts of plants - in flowers, leaves, fruits, seeds, and less often in underground parts. The amount of essential oils in different plant species ranges from barely noticeable traces (0.001%) to 20%; most often their content in plants is 2 - 3%. Essential oils are unstable, therefore, when harvesting essential oil plants, it is necessary to strictly follow the rules of collection, drying and storage.

The most commonly used essential oil plants in practice are oregano, wormwood, sage, juniper, coriander, dill, caraway, anise, valerian, thyme, etc. [2].

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Organic acids actively participate in metabolism, stimulate the secretory activity of the salivary glands, increase the secretion of bile and pancreatic juice, improve digestion, have bactericidal and other effects [3].

Mineral salts of inorganic acids are found in plants in a dissolved state or crystallize in the form of oxalates. Potassium, calcium, magnesium, sulfur, phosphorus, silicon, iron, together with carbon, hydrogen and oxygen make up 99% of the mass of plants and animals. The content of microelements in the body - copper, zinc, cobalt, manganese, nickel, aluminum, etc., is calculated in fractions of a percent [4].

Vitamins are biologically active organic substances necessary for the functioning of the body. They play an important role in metabolism, in the processes of absorption and use by the body of all nutrients, in the protective functions of various organs and other vital processes. Most vitamins are not synthesized in the body, but come from food, mainly plant foods. The animal body needs about 20 vitamins from the outside, and the rest are synthesized in the internal organs. Lack of vitamins in food leads to metabolic disorders, deterioration of the nervous system, and other pathological phenomena. Hypo- or vitamin deficiency occurs [5].

The medicinal properties of plants may also be due to the presence of other chemical compounds.

In both medical and veterinary practice, specialists turn to the use of herbal medicines and receive positive results, explaining this by the fact that plant preparations contain components that promote the absorption of biologically active substances in the digestive tract, enhance enzymatic activity and improve the permeability and elasticity of tissues [3]. Skillful use of herbal medicine by combining medicinal plants makes it possible to reduce the risk of complications, which makes it possible to carry out treatment on an outpatient basis for a long time, in veterinary medicine - to preserve the number of livestock, to reduce the consumption of expensive chemotherapeutic agents [4].

Many authors believe that it is possible to increase the effectiveness of herbal medicines by combining medicinal plants in the form of collections and complex preparations. The active substances of plants are in certain relationships formed during interaction with environmental conditions [5]).

CONCLUSION

Treatment with herbal medicines cannot be contrasted with other means and methods used for therapeutic and prophylactic purposes. When prescribing drugs from medicinal plants, it is necessary to reasonably and critically consider the possibility of curing a particular disease; depending on the disease, herbal medicine can be used as an independent method or included in a general treatment complex.

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