

Fig. 1 Elemental composition of the lily of the valley grass collected in the territory adjacent to the lake Ylukyser to (1) and in the phase (2) flowering.

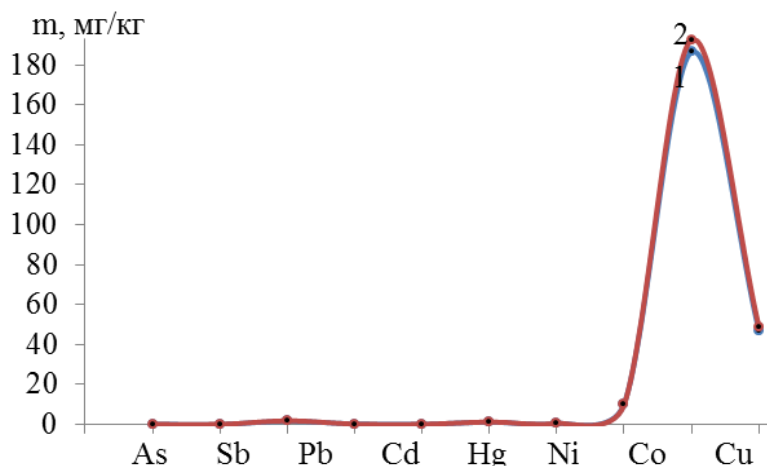


Fig. 2 Elemental composition of the grass of the lily of the valley collected in May, on the territory of En Zhah to (1) and in the phase (2) of flowering.

Conclusions. Studies to clarify the effect of TM and, especially, arsenic on the safety and biological activity of plant raw materials and oncological risks will continue.

NATURAL BIOGENIC STIMULATORS, AUCSINS AND ARTIFICIAL GROWTH REGULATORS

Veretsun A., Kralin N.

Scientific supervisors: senior lecturer Berestova V. V., Tyukina V. M.,
Shemchuk O. A., Rudakova O. V.

College of the National University of Pharmacy, Kharkiv, Ukraine
college@nuph.edu.ua

Introduction. Biogenic stimulants is a class of biologically active substances of plant, as well as animal origin, which provide a variety of stimulating effects on various organs and systems of the body. According to modern data, these substances represent a complex complex in which the main role is played by carboxylic acids: amber, oxalic, malic, citric, tartaric, cinnamic, oxycortic, and also high molecular weight aromatic acids. Bacterial herbs containing biostimulants include: aloe vera (*Aloë arborescens* Mill); crassula (*Sedum maximum* Sciter.); caustic (*Sedum acre* L.); kalanchoe pinnata, indoor ginseng (*Kalanchoë pinnatum* Lam.) and others like that.

Based on the fact that biogenic stimulants exhibit adaptogenic properties, stimulate the protective mechanisms and processes of regeneration in the human body, we have decided to check whether extracts of plants containing biogenic stimulants accelerate the growth and development of roots and buds in plants.

Another known group of biologically active substances that affect plant growth and development are phytohormones. Having worked out the information, we decided to involve one of the groups of phytohormones - auxins in the experiment. Because auksin is the first open phytohormone, it is also capable

of influencing simultaneously phototropism and plant geotropism. By chemical structure, auksin is indole – acetic acid. Most of it is synthesized in apical parts of plants and cause apical dominance, inhibiting the growth of lateral kidneys. Natural auksins are unstable and expensive compounds, therefore began to use stable and cheap synthetic analogues of indole pyruvic, naphthyl acetic acid, and others. To participate in the experiment, as a growth stimulant, we chose indole butyric acid. The natural source of this substance is the willow acne. The synthetic analogue is “Cornevin”.

Aim. To find out whether the extracts of aloe and kalanchoe are stimulators or growth inhibitors. To confirm the influence of indole of butyric acid on phototropism, plant geotropism and apical dominance. Compare the effectiveness of extracts of aloe, kalanchoe, indole butyric acid derived from natural source and its artificial analog "Cornevin".

Materials and methods. Object of research: branches with kidney black currant.

Subject of research: diluted aloe juice, kalanchoe, infusion of willow branches, willow branches, "Cornevin".

Prepared branches of black currant - cut off the required number of branches, without damaging the shoot. Prepare a solution of aloe juice, kalanchoe.

Equipment: water, a glass, leaves of aloe and leaves of kalanchoe, pipettes.

Progress:

Take the leaves of aloe and leaves of kalanchoe, put in a refrigerator in a dark place at a temperature of +4 - +8 degrees for 10 -12 days. Under such conditions, in cell cages, biogenic stimulants are produced. After 10-12 days, squeeze the juice, 10 drops of aloe to dissolve in 100 ml of water, 10 drops of kalanchoe dissolve in 100 ml of water.

Cook the infusion of willow branches, solution "Cornevin".

Equipment: water, glass, measuring bulb, scales, willow branches, "Cornevin".

Progress:

Take the willow branches 10 pc. Chop pieces of 3-4 cm long using a cutter. Boil 0.5 liters of water. Pour the crushed willow with warm water and leave for 24-48 hours. Succeed of the infusion. It can be stored for two months. Weighed 2 grams of “Cornevin” and dispersed it in 2 liters of water.

Prepare 6 branches of black currant. Place 1 control branch in a glass of water, 1 branch - in a glass with a solution of aloe, 1 branch - in a glass with a solution of kalanchoe, 1 branch - in a glass with willow infusion, 1 branch - in a glass with solution "Cornevin", 1 branch - in a glass of willow branches. Put on bright light, air temperature + 20- +22 degrees. Every 2-3 days, replace, with separated water, adding to the appropriate glasses a solution of aloe juice, kalanchoe, willow infusion, solution "Cornewin" and a branch of willow. Observe the changes in growth and growth on the cuttings and buds on the branches of black currant. Record the data.

Results and discussion. We conducted the test for 20 days. During these days the following changes were occurred:

1. On day 4 the branches of the black currant stood in the water began to open the shoots;
2. On day 5 the branches of the black currant stood in the solution of aloe juice began to open the shoots;
3. On day 8 on the branches of blackcurrant stood in the solution of aloe juice, the leaves began to appear; on the one that stood in the solution of the juice of kalanchoe, the shoots were broken;
4. For 10 days, on the branches of black currant stood in the solution "Cornevin" and in the infusion of willow began to appear roots;
5. On day 11 roots began to appear on a branch of black currant stood in water with willow branch;
6. For 10 days on a branch of black currant, which was in the solution of kalanchoe juice, leaves began to dissolve;
7. On day 15 roots began to appear on a branch of black currant stood in water;
8. On day 16 on a branch of black currant, which was in the solution of aloe juice, roots appeared;
9. On the 18th day the roots began to appear on a branch of black currant, which was in the solution of kalanchoe juice.

Conclusion. Analyzing the results obtained during the experiment, we arrived at the following conclusions. The solution of aloe juice and kalanchoe is a stimulant and the development of shoots and roots for bushes (black currants).

Infusion of willow branches – is a stimulator for the formation of roots and accelerates the development of the root system. The use of raw branches of willow and “Cornevin” solution showed similar results. Apical dominance is observed, the growth of lateral shoots is slower than when stimulating the solutions of aloe and kalanchoe juice.

IN VIVO STUDY OF HOW SOME SALVIA OFFICINALIS EXTRACTS AFFECT DIURESIS IN RATS

Verkhovodova Y. V.

National University of Pharmacy, Kharkiv, Ukraine

juliaverh73@gmail.com

Introduction. In medical practice non-steroid anti-inflammatory drugs (NSAIDs) commonly used for pharmacotherapy of pain syndrome of different genesis, for treatment of various inflammatory diseases. NSAIDs have many side effects such as nausea, ulcerations, hepatic and kidney toxicity, etc. Search of safe and effective component among different salvia officinalis extracts as an alternative to NSAIDs defined as a goal point. Considering so salvia officinalis is already being used in folk medicine and dentistry for treatment and prevention of different inflammatory and local infectious diseases.

Aim was to investigate how complex of phenolic compounds with argenin, polysaccharide complex, cleared complex, saponin complex affect diuresis in rats.

Materials and methods: the effect on diuresis in rats was studied by the method of Berkhin E.B. White nonlinear rats weighing 130-160 g were used. Six animals in the study groups and in the control group. In the study of diuretic action rats contained in a constant diet with free access to water. Before the start of experimental studies, rats were kept for 2 hours without food and water. Doses of 10, 20, 50, 70 mg/kg were studied in the form of fine water suspension which was introduced by a catheter into the stomach of animals. After 30 minutes, intra-gastric administration of tap water via special metal probe which was introduced at a rate of 3 ml per 100 g body weight of the animal. Urine was collected. Diuresis was assessed after 2 and 4 hours in ml and calculated into the percentage to the control. The content and care of the animals were in accordance with the provisions of the European Convention for the Protection of Vertebrate Animals used for experimental and other scientific purposes (Strasbourg, 1986).

Results and discussion. Complex of phenolic compounds with argenin, polysaccharide complex, cleared complex, saponin complex appeared to have antidiuretic effect with a tendency to increase with decreasing the dose; maximum antidiuretic effect was obtained using lower doses.

Conclusions. Complex of phenolic compounds with argenin, polysaccharide complex, cleared complex, saponin complex of salvia officinalis were investigated in doses 10, 20, 50, 70 mg/kg to see how they affect diuresis in rats. All the extracts have shown antidiuretic activity in various intensity. Some of them have shown biphasic curve of action saving the main tendency low dose – high action effect. It is possible to conclude that salvia complexes similarly to NSAIDs inhibited diuresis in rats. Consequently, therefore salvia officinalis is a perspective plant for further pharmacological studies.

ISOLATION AND IDENTIFICATION OF LIMONENE

Vetrova A. V., Nuguman Kh. B., Shaimerdenova Zh. R.

Scientific supervisors: assoc. prof. Figurinine I. V., lecturer Sotchenko R. K.

Karaganda State Medical University, Karaganda, Kazakhstan

anvetrova1@gmail.com

Introduction. Limonene, as one of the main components of the essential oil of orange has antiviral, hormone-controlling, antioxidant effects; increases the level of enzymes in the liver. Limonene can dissolve readily fats, waxes and petroleum products, is an alternative to toxic solvents (in accordance with the principles of «green chemistry» and intermediate raw materials in the chemical synthesis of medicinal