



## EFFECT OF PHYTOCOMPOSITION ON ALIMENTARY ANEMIA.

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**Abstract.** Tincture of DOY (a collection of medicinal plants) has a positive therapeutic effect on experimental animals. The general condition of the animals has improved, appetite for food has increased significantly. By the end of the experiment, the weight of the animals that received the tincture of DOY increased by 18.5% compared to the control group. The following results were obtained in the peripheral blood analyzes conducted during the experiment:

On the 7 th day of treatment, DOY at doses of 10 ml/kg and 25 ml/kg increased the amount of hemoglobin in the blood of animals by 25% and 30%, respectively, compared to anemia. In the same period, the amount of erythrocytes in peripheral blood increased by 20% and 25.7%, respectively, compared to the background of alimentary anemia. Under the same conditions, the amount of hemoglobin and erythrocytes in the peripheral blood of animals in the control group increased by only 12.5% and 5.7%, respectively. Almost no change was noted in the amount of leukocytes and it was around the physiological norm (10 thousand). The obtained results are presented in table.

From the obtained data, it can be seen that the peripheral blood elements in the blood of the animals that received the tincture of ODI on the 14th and 21st days of the experiment increased the amount of hemoglobin and erythrocytes with mathematical precision compared to the control group, and their amount reached the initial values, and this amount was maintained until the 45th day of the experiment. stood up As mentioned above, on the 14th and 21st days of the experiment, the amount of hemoglobin and erythrocytes in the blood of animals in the control group developed significantly slower and was much lower than the initial indicators, and it was 10.5-10.6 g% and 4.2-4, respectively. 5 mln. will be equal to The amount of leukocytes in all animals of the 3rd group was within the average physiological norm during the entire experiment.

Therefore, the studied tincture of phytoferron showed a high anti-anemic effect in alimentary anemia caused by special parches. The therapeutic effect of ODI on alimentary

anemia appears already on the 7th day of treatment, and it becomes more intense until the end of the experiment.

**Key words:** collection of medicinal plants, anemia, experimental animals, blood elements

**Introduction.** According to the World Health Organization (WHO), anemia and anemia are the most common diseases in the world. Among the anemia diseases, people suffering from iron deficiency anemia (IDA), which is caused by the decrease and lack of iron, make up 1.8 billion of the world's population and 90% of the anemia disease. That is why iron deficiency anemia is a problem in all countries of the world[1,2,3,7].

According to the data of the WHO, among the population of the countries, among the population of which more than 30% of the TTK was determined, they are included in the dangerous group. According to the information presented in the literature. Anemia and its TTK form are very common in the Republic of Uzbekistan, and our Republic belongs to the dangerous group according to this indicator.

The saddest thing is that STDs are especially common among pregnant women and young children, and have a negative impact on the health of the future generation and the economic and social development of the republic. The origin of this disease and anemic conditions depends on a number of factors, and it is necessary to use different methods for their prevention and treatment[4,5,6,8,9].

Currently, many anti-anemic drugs are used in medical practice to treat anemia and anemic conditions. But these drugs do not meet the demands of clinicians treating patients. Because most of these drugs are imported from abroad and they are sold at high prices; secondly, in addition to having a high therapeutic effect, these drugs cause various side effects, as a result of which their widespread use is limited to some extent; thirdly, most of these drugs have a symptomatic effect, and after stopping the course of treatment, the anemic state and the disease of anemia reappear. Prilepskaya, 2006 and b).

In the following years, a number of anti-anemic drugs (feramid capsule, ferask capsule, kogistin, pyrofer preparations, mummy capsule, etc.) were put into medical practice by Toshfarmi employees. But these preparations are not without the above-mentioned disadvantages.

Taking into account the above, the search, study and application of new natural and local anti-anemic drugs that prevent and treat anemia and anemic conditions are among the most urgent issues of today[10,11,12,13].

It is known from the literature that anemia is the most widespread disease in the whole world, and most cases of anemia are caused by iron deficiency.

Iron deficiency disease (IED) is also very common in our country. TEK accounts for 65-90% of anemia in general. According to these hematologists, one of the main reasons for the origin of TEK is the lack of enough proteins, vitamins, macro and microelements, especially iron, in the food consumed [14,15,16,17,18].

Taking into account the above, we studied the effect of artificially induced alimentary anemia in rabbits in a separate group.

**Materials and research methods.** The experiment was conducted in 15 laboratory rabbits according to the experimental model recommended by the pharmacological committee under the former Union SSV (T.I. Rys., 1991).

**Results.** When the state of alimentary anemia was revealed, the shape elements of blood in the peripheral blood of experimental rabbits decreased with mathematical precision. In particular, the amount of hemoglobin decreased by 35% compared to the initial values before anemia was revealed. Under the same conditions, the amount of erythrocytes in peripheral blood decreased by 39.7%, and the amount of leukocytes decreased by 19.9% (table).

The general condition of the rabbits in the experiment became much worse, they became less active, their appetite decreased significantly, and their body weight decreased.

After revealing the state of alimentary anemia and the disease, the animals were divided into 3 groups of 5.

The animals of the 1st-2nd groups were treated for 21 days by oral administration of the tincture at the rate of 1 ml and 2.5 ml /100 g of mass, i.e., in doses of 10 ml/kg and 25 ml/kg. Group 3 rabbits were given distilled water. Throughout the experiment, the main attention was paid to the general condition of the animals, the amount of hemoglobin, erythrocytes and leukocytes in their peripheral blood.

**Table 1**

T/r	Peripheral blood indicators	Blood markers in intact animals	Blood indicators when anemia is revealed
	Hemoglobin, g %	12,3±0,22	8,0±0,26
1	Erythrocytes, million	5,8±0,38	3,5±0,32
2	Leukocytes, thousand	10,6±0,32	9,0±0,37

OYO tincture has a positive therapeutic effect on experimental animals. The general condition of the animals has improved, appetite for food has increased significantly.

By the end of the experiment, the weight of the animals that received the tincture of DOY increased by 18.5% compared to the control group.

The following results were obtained in the peripheral blood analyzes conducted during the experiment: Effect of HYD on the development of alimentary anemia in rabbits.

**Table 2**

T/r	On the 7th day of treatment			
	Control received water	animals distilled	In animals receiving 10 ml/kg of ODY	In animals receiving 25 ml/kg of ODY
1	9,0±0,31		10,0±0,79*	10.5±0,55*

2	3,7±0,41	4,2±0,49	4,4±0,35
3	10,1±0,79	9.8±	9,5±1,05

**Animals at doses of 10 ml/kg and 25 ml/kg on the 7th day of treatment**

increased the amount of hemoglobin in the blood by an average of 25% and 30%, respectively, compared to anemia. In the same period, the amount of erythrocytes in peripheral blood increased by 20% and 25.7%, respectively, compared to the background of alimentary anemia. Under the same conditions, the amount of hemoglobin and erythrocytes in the peripheral blood of animals in the control group increased by only 12.5% and 5.7%, respectively. There was almost no change in the amount of leukocytes, and it was around the physiological norm (10,000). The obtained results are presented in table No. 10.

As can be seen in the table, the peripheral blood elements in the blood of the animals that received DOY tincture increased the amount of hemoglobin and erythrocytes with mathematical precision compared to the control group on the 14th and 21st days of the experiment, and their amount reached the initial values, and this amount was maintained until the 45th day of the experiment. . As mentioned above, on the 14th and 21st days of the experiment, the amount of hemoglobin and erythrocytes in the blood of animals in the control group developed significantly slower and was much lower than the initial indicators, and it was 10.5-10.6 g% and 4.2-4, respectively. 5 mln. will be equal to The amount of leukocytes in all animals of the 3rd group was within the average physiological norm during the entire experiment.

On the 14th day of treatment			On the 21st day of treatment		
10,5±0,55	11,2±1,02*	11,5±0,70*	10,6±0,34*	12,0±0,34*	12,4±0,34*
4,2±0,49	4,6±0,24	4,8±0,59	4,5±0,38	5,8±0,27	5,9±0,13
10,8±0,28*	9,5±0,50*	9,5±1,19*	11,0±0,33*	10,5±0,44*	10,4±0,258

**Table 3**

**Note:** \*- significance level  $R < 0.05$  compared to control.

**Conclusion.** Therefore, the studied tincture of phytoferon showed a high anti-anemic effect in alimentary anemia caused by special parches. The therapeutic effect of DO'Y on alimentary anemia appears already on the 7th day of treatment, and it becomes more intense until the end of the experiment.

**References:**

- 1.Kruglov D. S. INVESTIGATION OF MEDICINAL TEAS APPLIED IN HYPOFERRIC ANEMIA PHYTOTHERAPY //European Journal of Natural History. – 2007. – №. 5. – С. 56-58.
- 2.Wapler U., Crubézy E., Schultz M. Is cribra orbitalia synonymous with anemia? Analysis and interpretation of cranial pathology in Sudan //American Journal of Physical Anthropology: The Official Publication of the American Association of Physical Anthropologists. – 2004. – T. 123. – №. 4. – С. 333-339.
- 3.Якубова Л. К. и др. Некоторые механизмы противовоспалительного действия препарата 3, 4-бис-(2-бромобензоилоксиметил)-пиразола //Вестник Ташкентской медицинской академии. – 2013. – №. 1. – С. 31-35.
- 4.Ousaaaid D. et al. Anti-anemic effect of antioxidant-rich apple vinegar against phenylhydrazine-induced hemolytic anemia in rats //Life. – 2022. – T. 12. – №. 2. – С. 239.

- 5.Djanaev, G. Yu, O. A. Zaytseva, and O. O. Askarov. "Effect of Dry Extracts of Medicinal Plants on Urinary Excretion and Ion Exchange." *European Journal of Medical Genetics and Clinical Biology* 1.1 (2023): 90-97.
- 6.Khotimchenko S. A., Alekseeva I. A. Model of nutritional iron deficiency anemia in rats // *Voprosy Pitaniia*. – 1999. – Т. 68. – №. 5-6. – С. 13-15.
- 7.Махсумов Ш. М., Зайцева О. А. К механизму действия и некоторым токсикологическим характеристикам препарата 3, 4-бис-(2, 4-динитробензоилоксиметил)-пиразола // *Электронный инновационный вестник*. – 2018. – №. 1. – С. 14-15.
- 8.Tulkindzanovna S. G., Komilovich A. M. Regional causes of iron deficiency anemia, pathogenesis and use of antianemic drugs // *The American Journal of Medical Sciences and Pharmaceutical Research*. – 2021. – Т. 3. – №. 04. – С. 165-170.
- 9.Махсумов Ш. М., Зайцева О. А. Противовоспалительная активность нового производного бензойной кислоты дифенил-/бис-(бензоилокси)/-силон // *ФЭН-наука*. – 2015. – №. 6. – С. 41-44.
- 10.Aksan A. et al. Systematic review with network meta-analysis: comparative efficacy and tolerability of different intravenous iron formulations for the treatment of iron deficiency anaemia in patients with inflammatory bowel disease // *Alimentary pharmacology & therapeutics*. – 2017. – Т. 45. – №. 10. – С. 1303-1318.
- 11.Махсумов Ш. М., Зайцева О. А., Султанов С. А. О механизме противовоспалительного действия некоторых синтетических соединений : дис. – «Ліки-людині. Сучасні проблеми фармакотерапії та призначення лікарських засобів» Матеріали V Міжнародної науково-практичної конференції, 2021.
- 12.Pellicano R., Rizzetto M. Is hepcidin the bridge linking *Helicobacter pylori* and anemia of chronic infection? A research proposal // *Panminerva Medica*. – 2004. – Т. 46. – №. 3. – С. 165-169.
- 13.Djanaev, G. Y., Khakimov, Z. Z., Allaeva, M. J., Makhsumov Sh, M., Zaytseva, O. A., & Mamadjanova, M. A. Comparative Study of the Influence of Lesbochole. Misoprostol and Mucagen on the Gastric Mucous Barrier in Indometacin Gastropathy.
- 14.Weiss G., Ganz T., Goodnough L. T. Anemia of inflammation // *Blood, The Journal of the American Society of Hematology*. – 2019. – Т. 133. – №. 1. – С. 40-50.
- 15.Махсумов Ш. М., Зайцева О. А. Механизм противовоспалительного действия некоторых производных пиразола : дис. – Ташкентская медицинская академия, 2018.
- 16.Зокиров У. Б. и др. Изучение противовоспалительных свойств некоторых новых производных 3-(ароилоксиметил)-4-(ароилоксипропинил-1)-пиразола // *Фармацевтический вестник Узбекистана*. – 2006. – №. 4. – С. 32-36.
- 17.Махсумов Ш. М., Зайцева О. А. Исследование противовоспалительного действия некоторых производных бензойной кислоты. – 2022.
- 18.DeRossi S. S., Raghavendra S. Anemia // *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology*. – 2003. – Т. 95. – №. 2. – С. 131-141.