Biological Effectiveness of Food Additives “Sanjam” During Dysbiosis

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Abstract: The food additive "Sanjam" is used in folk medicine of Uzbekistan to normalize the functional state of the gastrointestinal tract. In order to study the biological effectiveness on the functioning of the gastrointestinal tract of this plant complex, an experiment was conducted. During the experiment, it was revealed that this dietary supplement leads to normalization of the evacuation function of the intestine, reducing the risk of disorders of the gastrointestinal tract, as well as maintaining the proper functioning of the intestine.

Keywords: "Sanjam", biological performance of the evacuation activity of the small intestine, gastrointestinal tract, dysbiosis.

Introduction
Gastrointestinal diseases such as colitis, enteritis, Crohn's disease can eventually cause intestinal tumors, infections, autoimmune tissue lesions and dysbiosis. These intestinal disorders mainly develop against the background of malnutrition, the correction of which can lead to the cure of this pathology.

Herbal medicines have been used for many diseases of the gastrointestinal tract and showing their effectiveness in the clinic by their safety, their high acceptability by patients, efficiency, and cheapness than synthetic drugs such as azathioprine, cyclosporine, etc. which are aimed at inducing and then maintaining remission of symptoms and inflammation of the mucous membrane (1). Based on this, our task was to study medicinal plants in a complex of dietary supplements called "Sanjam", which in folk medicine were used to treat gastrointestinal diseases.

The biologically active additive "Sanjam", was registered by the Ministry of Health of the Republic of Uzbekistan, consists of a complex of medicinal plants that have anti-inflammatory, antioxidant, restorative properties aimed at normalizing the functional state of the gastrointestinal tract, and also to protect the body from the effects of external factors.

In this article, the biological effectiveness of this plant complex on the functioning of the gastrointestinal tract was studied.

Material and methods
The study of the biological evaluation of the effectiveness of this drug was carried out according to the methodology used in our previous studies (2).

For this experiment, white male rats were selected, which age was 9-10 weeks. The study was conducted in comparison with the main group of experimental animals who received the infusion of "Sanjam" with the control group, animals not receiving therapy. All animals at the time of the experiment were in a general emergency diet. There are 4 experimental white rats in each group. There are only 8 animals of the experimental group.
A method for determining the evacuation activity of the small intestine.

In order to study the evacuation activity of the small intestine, an inert marker Evans Blue was used. To do this, the rats were injected with the Evans Blue marker per os through the intestine and after 20 minutes the animals were euthanized and opened, the length of the entire intestine and the distance of the marker that passed through the small intestine in 20 minutes from the pylorus to the caecum were measured. The ratio of the distance traveled by the marker to the total length of the intestine multiplied by 100 was taken as the Transit Index — IT expressed as a percentage.

Research and discussion

When studying the effect of "Sanjam" on the evacuation function of the small intestine in healthy animals after a 14-day intake of this dietary supplement, a tendency of acceleration in the intestine from 30.3% to 40% (p >0.05) of the transport of contents through the intestine was determined in comparison with the control group.

To study the differences in the evacuation activity of the small intestine in dysbiosis, the animals took amoxycycline and metronidazole for 7 days. At the same time, the animals (Dysbiosis group) showed a significant slowdown in the transit of intestinal contents from 30.3% to 25.2% (p>0.05) compared with the control group (Fig.1).

![Fig.1 Dysbios group](image1)

In the study of changes in the evacuation activity of the small intestine of the group (Dysbiosis + dietary supplements) with corrective administration of dietary supplements after modeling dysbiosis, antibiotic solutions were orally administered to rats for 7 days once a day, and from day 8 to day 30, tincture of Sanjam was administered orally. On the 31st day of the experiment, the subjects (Dysbiosis + dietary supplements) showed a 32.27% tendency to increase transit through the intestine compared to 25.2%. the trend in the group (Dysbiosis) Fig2.

![Fig.2 Dysbiosis group treated with Sanjam](image2)

When comparing the animals of the "Dysbiosis + dietary supplements" groups with the control group, there were no significant differences in the change in the evacuation activity of the small intestine. The transit index in the "Dysbiosis + dietary supplements" group was 32.2%, and in the control group - 30.3%. this indicates normalization of the transit of intestinal contents after taking dietary supplements.
To study the change in the evacuation activity of the small intestine before the prophylactic administration of Sanjam before the simulation of experimental dysbiosis before (the group "Dietary supplements + Dysbiosis"), rats were administered orally an infusion of Sanjam once every day for 30 days. Then, from the 15th to the 30th day, an antibiotic solution was administered orally. on the 31st day of the experiment, they were measured. changes in the evacuation function of the small intestine in animals of the "dietary supplements + Dysbiosis" group in relation to the "Dysbiosis" group. In this study, a 30.2% accelerated transit index was detected in all experimental groups of "Dietary supplements + Dysbiosis", compared with 25.2% of the IT group of "Dysbiosis", whereas, compared with the control group with 30.3% of IT, no significant differences were found, which indicated normalization of transit of intestinal contents in animals of all experimental groups with preventive intake of Sanjam Fig.2.

Fig. 3 Group treated with Sanjam before modeling of dysbiosis

Thus, when modeling experimental dysbiosis, there is a violation of the evacuation function of the small intestine, which is expressed in slowing down the rate of transit of contents through the intestine. The introduction of the studied dietary supplements, both for the purpose of correction and for the prevention of dysbiosis, leads to normalization of the evacuation function of the small intestine in all experimental groups who took "Sanjam".

Conclusion

According to the results of an experimental study of the effectiveness of "Sanjam", normalization of the intestinal evacuation function, reduction of the risk of disorders of the gastrointestinal tract, maintenance of proper bowel function were revealed.

According to the results of the evaluation of the effectiveness of Sanjam, it is recommended to use:

1) to normalize the functional state of the gastrointestinal tract.
2) for a restorative effect.
3) to protect the body from external factors.

The above data indicate the need for further study of the composition of this dietary supplement to identify specific components responsible for anti-inflammatory, antioxidant, protective and normalizing the function of the gastrointestinal tract properties.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

AUTHOR CONTRIBUTION STATEMENT

Mamatova Irodakhon designed, performed all experiments, analyzed the data and wrote the article; Ibragim Askarov analyzed the data and wrote manuscript. All authors read and approved the manuscript.
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