



## Technology for Manufacturing the Feed of Therapeutic Granules

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**Abstract:** The article is devoted to the comparative analysis and research of the usefulness of feed, soil, water and plants. For the first time, it is proposed to develop a feed of therapeutic granules for sheep producers in the conditions of Central Asia. Pasture plants, soil and water were research in order to produce fodder granules for feeding sheep producers during the mating period. It is proposed to include macro-microelements in the composition feed of therapeutic granules that are not contained in plants growing on the territory of the Republic of Uzbekistan to compensate and fully balance the composition of feed. For the first time, a technology was developed for the production of therapeutic granules for the types of farm animals.

**Keywords:** Therapeutic granules, macro-microelements, sheep producers, hay, straw, soil, fertilization, spermatogenesis.

**Introduction.** Soil and climatic conditions in the Republics of Central Asia act as a limiting factor of growth and development for pasture plants, the diversity and originality of the local flora depends on them [3].

A wide variety of plants (about 1700 species) grows in the conditions of the Republic of Uzbekistan [2], mainly related to medicinal plants. Since ancient times, plants such as licorice naked, akkurai, Richter's solyanka, celandine large, citron wormwood, garnet, leafless anabasis, almond, harmala, sage and many others have been widely used in practical medicine. Almost 40% of medicinal plants are used in the pharmaceutical industry. Avicenna once said that celandine cures about 250 diseases [1]. The importance of medicinal plants has been written about: "Despite significant progress in science and technology, humanity is not less, but more dependent on plants as natural resources" [7]. S. Peisakhovich and colleagues isolated 0.1 g of phytoestrogens similar to the female hormone lutein from 1 kg of mountain onions [5].

We propose feed granules based on the research of biogeochemical parameters of the soil in terms of the content of macro-microelements, on the basis of which diets are compiled by types of farm animals [4].

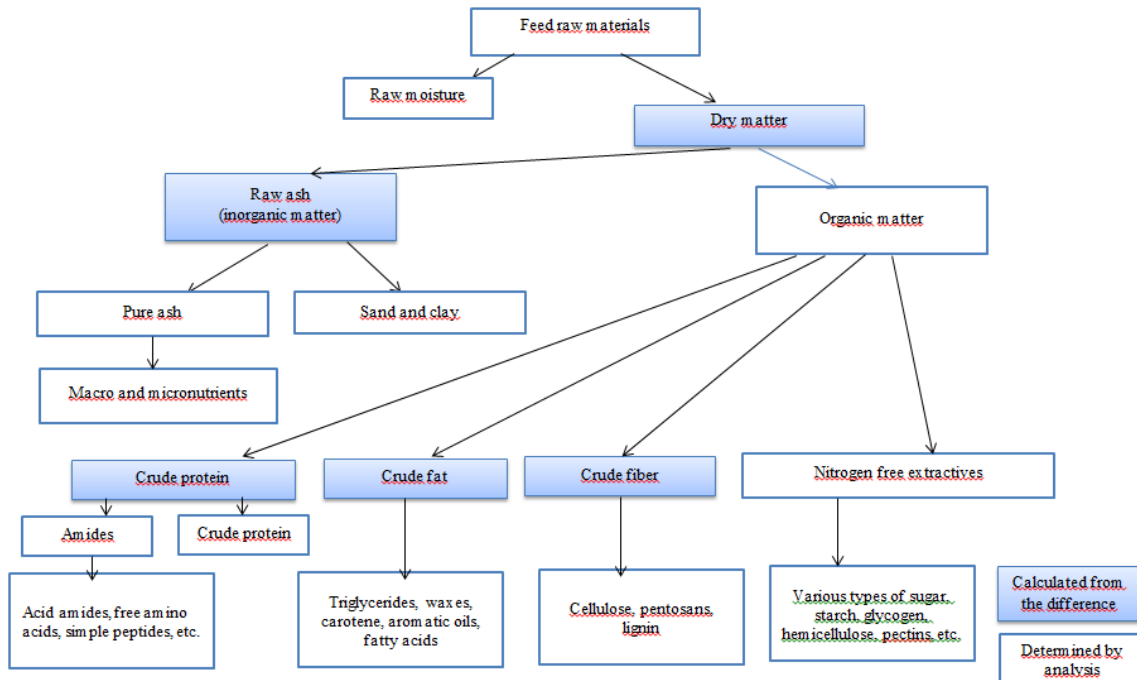
### Aims and objectives of research.

1. Formation of the composition of the feed of therapeutic granules for rams-producers in the breeding period.
2. Determination of macro-micronutrient deficiency in feed.
3. Production of the feed of therapeutic granules for feeding rams-producers in the breeding period.
4. Research and analysis of the effectiveness of the feed of therapeutic granules when feeding rams-producers.

**Research methodology.** Soil, water, feed are being analyzed in order to establish a deficiency of macro-microelements for the further development of the feed of therapeutic granules.

Soil analysis was carried out according to the method of L.A.Vorobyov [3].

Determination of the feed composition by the Wende method. The gross content of raw nutrients is determined analytically, by groups of substances, as in Figure 1 [8].



**Figure 1. Chemical composition of feed raw materials**

To analyze the feed, it is necessary to determine the humidity and the amount of dry matter. The sample in the amount of 10 g was kept in a drying cabinet for 4 hours at a temperature of 105 °C. The weight of the sample of the initial and final substance was determined based on the difference in mass according to the formula:

$$\frac{\text{Total moisture, g}}{\text{Initial sample weight, g}} * 100 = \text{Moisture content \%}$$

Raw ash was determined based on the same amount of sample. The red-hot porcelain crucible with the sample was kept in an autoclave for charring, and placed in a muffle furnace at a temperature of 550 °C until a stable weight was reached. The mass of the residue was calculated by the formula:

$$\frac{\text{Mass of raw ash, g}}{\text{Initial mass of the sample, g}} * 100 = \% \text{ of raw ash.}$$

Crude protein was determined by the Kjeldahl method [8].

Also, equipment, the Chens ozone generator and the Heister detoxifier (PRC) were used. The experiments were carried out on astrakhan farms in the Sovetabad district of the Samarkand region, and the Nurata district of the Navoi region, where 7 departments of 500 heads are concentrated. 11 breeding sheep were under observation, they were cared for for 45-50 days. 6 producing rams were added 0.5 kg of the feed of therapeutic granules for the experiment, and 5 producing rams served as a control.

**Research results.** With a constant increase in the number of Karakul sheep, their productivity, especially for meat, remains low. Intensive animal fattening is necessary to increase meat production. The increase in productivity for meat, doodle, wool and other indicators depends on the quality, quantity and content of macro-microelements in the feed. The ration should be based on many factors, including the factors of digestion and absorption of nutrients at the cellular level. The results of lambing showed the effectiveness of the use of the feed of therapeutic granules the fertility of 500 ewes of the experimental group was 90% and 500 heads of the control group - 82%. Based on the analysis of feed, soil and water, we have compiled feed of therapeutic granules in the following composition, Table 1.

**Table 1. Composition of the feed of therapeutic granules**

Type of feed	Specific weight of feed, %	Contained in 1 kg of granules		
		Feed weight, kg	feed unit. kg	Digested protein, g
Compound feed	45,0	0,45	0,40	36,0
Hay from various grasses	25,0	0,25	0,08	9,5
Alfalfa hay	10,0	0,10	0,05	11,0
Straw	3,0	0,03	0,01	0,1
A mixture of pomace	15,0	0,15	0,7	3,5
Hydrolysate from waste	0,5	0,005	0,004	5,0
Therapeutic compounds	1,5	0,015	-	-
Total	100	1,00	0,65	65,0

**Note:** in 1 kg of the feed of therapeutic granules are administered in the following dose: feed phosphate, g - 7.0; cobalt chloride, mg - 1.0; zinc sulphate, mg - 250; manganese sulphate, mg - 200; copper sulphate, mg - 40.

The composition of the feed of therapeutic granules prepared for rams-producers should not include the following components, such as cotton waste - oil cake and husk, since they contain toxic compounds of gossypol, which have a sterilizing effect. The production of the feed of therapeutic granules is carried out in a specially equipped workshop, undergoes strict control during release and release to the consumer, in compliance with all norms and rules. The feed of therapeutic granules are prepared like normal granules. Feed granulator ОГМ-0,8 or ОГМ-0,5 manufactured by «Нерис» (Lithuania) is used in combination with a service unit in the form of AVM-0.4, RUS dispenser, C-12 mixer, crushers ДКУ-1 and ДКУ-2, straw cutter ИГК- 30.

The equipment is installed in the production line in such a way that the supply of raw feed and therapeutic additives occurs during translational movement and is concentrated in the form of special granules and leaves the workshop. Such a scheme for the production of the feed of therapeutic granules has been worked out in the course of experimental work. This workshop is capable of producing up to 5-6 tons of granules per day.

**Conclusion.** Thus, the use of the feed of therapeutic granules to increase the sexual function of producing rams is appropriate, increasing the resistance of producing rams, improves spermatogenesis, increases fertilization ewes and fertility by 100 heads compared to the control. The rams-producers became more energetic, the results of the lambing in the Sovetabad district gave 8-10 heads of lambs in addition compared to the control. In the future, it is necessary to increase the number of the feed of therapeutic granules in order to provide for all flocks of departments in the Sovetabad and Nurata districts, which contribute to an increase in sperm production and, thereby, increase the fertilization of ewes.

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