

## Chemical Composition of Royal Jelly and its Use in Traditional Medicine

**Yaqubov Xojiakbar Sherali ugli**

Andijan Institute of Agriculture and Agro-technologies, Trainee Teacher

E-mail: yaqubovxojiakbar@gmail.com

**Mo'yidinov Muslimbek Mahsutali ugli**

Andijan Institute of Agriculture and Agro-technologies, Assistant

E-mail: muslimbek3112@gmail.com

**Received:** 2025, 09, Aug

**Accepted:** 2025, 08, Sep

**Published:** 2025, 07, Oct

Copyright © 2025 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).



Open Access

<http://creativecommons.org/licenses/by/4.0/>

**Abstract:** This article provides information about the importance of bee products in traditional medicine and the chemical composition of royal jelly. Methods of obtaining royal jelly and conditions for its storage are described. Information about treating various diseases with preparations made from royal jelly is also presented.

**Keywords:** Royal jelly, traditional medicine, queen bee, digestive system diseases, respiratory system diseases, vitamins, amino acids.

**Introduction.** Bee products have been widely used in traditional medicine since ancient times. Among them, royal jelly stands out due to its unique chemical composition and healing properties, playing an important role in maintaining human health.

Royal jelly positively affects the nervous system, cardiovascular system, urinary system, digestive system, joints and bones, muscles, and respiratory system.

Various medicines are produced from royal jelly to treat different diseases. Royal jelly improves metabolism, is used against weight gain or loss, strengthens the body's resistance to infectious diseases, and improves the function of endocrine glands. Additionally, it shows good effects in treating atherosclerosis and cardiovascular insufficiency.

Due to the versatile properties of royal jelly and its diverse effects on different body systems, it should be used only under a doctor's supervision.

**Method of Obtaining Royal Jelly.** Obtaining royal jelly is a complex process. Worker bees feed their larvae with royal jelly, giving the most to the queen larvae. Therefore, it is advisable to use specially made queen cells for collecting royal jelly. To collect large quantities of royal jelly, the method of orphaning the hive is applied, yielding good results depending on the species of bee. For example, from Caucasian bees, 50-60 queen cells can be collected at one time.

To collect royal jelly, a suitable hive is selected, and the queen bee is removed. The hive without the queen is left with more capped brood cells, some feeding cells, and one fresh capped brood cell. After 5-6 hours, young larvae are placed into special queen cells in the center of the orphaned hive. Bees fill these queen cells with royal jelly over 4 days. Royal jelly can be collected from bees every 4-5 days.

After collection, the hive used for royal jelly production can be reunited by introducing a new queen or by temporarily protecting the existing queen when reintroducing her to the hive.

The collection of royal jelly is carried out in a room complying with sanitary standards. Before starting, hands and all tools used are disinfected with alcohol. Larvae taken from the royal jelly cells are removed.

**Storage of Royal Jelly.** Proper attention is required for storing royal jelly. Since royal jelly loses its beneficial properties when exposed to open air, it is best to store it inside the queen cells. The product begins to deteriorate 15-20 minutes after removal from the hive.

For storage, royal jelly is placed in natural queen cells in special hermetically sealed containers and kept in a refrigerator at 1.5-2°C throughout the year. Another method involves collecting royal jelly in glass flasks, sealing them tightly with wax to prevent air exposure.

**Chemical Composition of Royal Jelly.** The beneficial properties of royal jelly are related to its chemical composition. Royal jelly is one of the most valuable and essential products in beekeeping. It is rich in various substances including amino acids, carbohydrates, vitamins, enzymes, macro- and microelements.

**Discussion.** Royal jelly contains 60-70% water, with the remaining 30-40% being dry matter. Of the dry matter, 20-50% are proteins, 10-40% carbohydrates, 5-15% fats, and 1.5-3% vitamins, minerals, enzymes, and other biologically active substances.

Royal jelly contains amino acids such as asparagine, cysteine, arginine, lysine, leucine, valine, proline, glutamine, isoleucine, and oxyproline. Macro- and microelements include zinc, manganese, cobalt, iron, aluminum, chromium, gold, nickel, calcium, potassium, phosphorus, sodium, copper, and over 100 other elements.

Carbohydrates found in royal jelly include glucose, fructose, ribose, sucrose, and maltose. Enzymes such as invertase, amylase, catalase, protease, glucosidase, phosphatase, cholinesterase, and ascorbinoxidase are also present.

**Health Benefits and Usage.** Based on its composition, royal jelly has nutritional and healing properties. It positively affects the nervous, cardiovascular, urinary, digestive, joint and bone, muscular, and respiratory systems.

Royal jelly prevents insomnia and normalizes sleep. It extends the reproductive age and helps in overcoming chronic reproductive disorders. It is also beneficial in cases of infertility.

Royal jelly should be taken 2-3 times daily, 30 minutes before meals, and 3 hours before sleep at night. Dosage depends on the product and form, so it should be taken according to the manufacturer's instructions. The standard treatment course lasts 1-2 months.

Royal jelly is also used to prepare micro-enemas and suppositories.

**Conclusion.** In summary, royal jelly holds an important place in traditional medicine due to its natural healing properties. It is effectively used to restore health, increase energy, and prevent

various diseases.

### References:

1. O‘zbekiston Respublikasi Prezidentining PQ-4312-sonli qarori, 2019-yil.
2. STEAM Education Guidebook, UNESCO, 2020.
3. "Pedagogik texnologiyalar va innovatsiyalar", B. M. Mirzaaxmedov, 2021.
4. Texnologiya fani uchun metodik qo‘llanma. Respublika ta’lim markazi, 2022.
5. O‘qituvchilarning tajriba almashinuvi bo‘yicha ochiq darslar to‘plami. Andijon, 2023
6. **Viuda-Martos, M., Ruiz-Navajas, Y., Fernández-López, J., & Pérez-Álvarez, J. A. (2008).** Functional properties of honey, propolis, and royal jelly. *Journal of Food Science*, **73**(9), R117-R124.<https://doi.org/10.1111/j.1750-3841.2008.00966.x>
7. **Ramadan, M. F., & Al-Ghamdi, A. (2012).** Bioactive compounds and health-promoting properties of royal jelly: A review. *Journal of Functional Foods*, **4**(1), 39–52. <https://doi.org/10.1016/j.jff.2011.12.007>
8. **Ahmad, S., Campos, M. G., Fratini, F., Altaye, S. Z., & Li, J. (2020).** New insights into the biological and pharmaceutical properties of royal jelly. *International Journal of Molecular Sciences*, **21**(2), 382.<https://doi.org/10.3390/ijms21020382>