



## **Kooze-Asal knowlege-based Company**

**The producer of antibiotic free honey and natural food supplements based on bee products**

**Located in Isfahan Scientific and Research Town**

The research and development unit of the Kooze-Asal knowlege-based Company, with new knowledge in Pure Persian Royal Jelly processing, has been able to develop a domestic production technology of Dragée Royal Jelly (DRJ) in accordance with international standards.

## Indicators of Dragée Royal Jelly quality:

- Sanitary manufacturing license from the Food & Drug Administration of Iran
- ISO 9001:2015 Quality Management Standard
- ISO 22000:2018 Food Safety Management Systems
- Confirmation from the Scientific Association of Health Education of Iran
- Holder of the statue of the 3rd National Festival Healt Oriented Industry in Iran
- Certificate of Innovation Management based on ISO 56002:2019

## The Magic of Queen Bee

Royal Jelly is an important functional food item that possess several health promoting properties.

Royal Jelly is a viscous Jelly substance and milky secretion from the hypopharyngeal and mandibular glands of young worker bees and is used to feed the bee larvae up to three days. Its odor is pungent, the taste being sour and sweet. The queen honeybee is fed Royal Jelly throughout all life, and this is the reason for the longevity, larger body and extraordinary fertility of the queen bee [1].

The composition of Royal Jelly is quite complex. It contains different carbohydrates, proteins, amino acids, fatty acids, minerals, trace elements, vitamins, organic antibiotic and acetylcholine, which possess several health promoting properties [1].

The unique feature of Royal Jelly is 10-hydroxy-2-decenoic acid (10-HDA), which is believed to be present only in Royal Jelly, is known for having various pharmacological effects.

Determination of 10-HDA by High-performance liquid chromatography (HPLC)

10-HDA %	0-1.3	1.4 -1.6	1.7 - 2	2.1 - 3	≥ 3.1
Royal Jelly quality	Unacceptable	Weak	Good	*Very Good	*Excellent

\*Royal Jelly quality used in Kooze-Asal knowledge-based Company

## Methods of use of Royal Jelly

Royal Jelly is used fresh, mixed with honey or other bee products such as pollen and propolis, in capsules or syrups.

The storage condition and dosage of Royal Jelly are critical. Since the specific gravity, moisture and storage condition of Royal Jelly are different from honey, in a mixture of honey and Royal Jelly, Royal Jelly is exposed to oxygen, then spoilage occurs. For this reason, this method of use, mixture of honey and Royal Jelly, is not recommended. Also, use of Royal Jelly in the form of capsules, due to swallowing and lack of oral absorption, is not recommended.

## **A new technology for production of Dragée Royal Jelly (DRJ)**

Freeze-dried Royal Jelly goes through a process of dehydration, also known as lyophilizing, to remove the water by high vacuum at low temperature. This process does not include heat or chemicals. Lyophilized royal jelly in DRJ maintains all the nutrients of the fresh product and allows for storage at room temperature and a longer shelf life.

Pure Persian Royal Jelly is harvested from Kooze-Asal beehives, depending on the quality charter of the Association of Producers of Royal Jelly.

Sucking/Chewy Dragée, named DRJ is composed of freeze-dried royal Jelly



and honey with natural coating, and contains no additives, dyes or added sugars.

## Health Promoting Properties of Dragée Royal Jelly

### ► Immunomodulatory and Anti-inflammatory Activities

Dragée Royal Jelly, especially 10-Hydroxy-2-decenoic acid (10-HDA; "Royal Jelly acid"), is taken into consideration numerous biological properties and several pharmacological activities such as, antibiotic, anti-inflammatory, immunomodulatory and anti-allergic. Studies showed that Royal Jelly exhibited immune stimulatory effects by enhancing antibody production and proliferation of immunocompetent cells [2].

### ► **Increases fertility and sexual vitality**

Infertility is a fairly common world problem, which unfortunately, today's lifestyle has increased this problem. Several unhealthy facets such as lack of physical activity, stress, smoking, diabetes, obesity and polycystic ovary syndrome, have negative effects on the fertility of male and female. Scientific and traditional findings are proven Royal Jelly is the therapeutic and act as a food supplements that can be used it in to improve fertility and sexual vitality in men and women. Royal Jelly Dragée increases egg quality, sperm count and motility and can balance sex hormones [3] [4].

### ► **Reduces the side effects of chemotherapy and radiation therapy**

## **and improve the quality of of certain patients**

Many researchers have reported the prophylactic use of Royal Jelly for side effects of chemotherapy and radiation therapy in cancer patients. Royal Jelly Dragée can help improve the quality of life and relieve fatigue and weakness in certain patients, including cancer patients.

A study demonstrated that prophylactic use of Royal Jelly was effective in reducing mucositis induced by chemo-radiotherapy in head and neck cancer patients [5]. Also, in children who have malign diseases such as acute leukemia, lymphoma and hepatoblastoma, consumption of Royal Jelly for one month, increases the average white blood cells, neutrophils and lymphocytes. The general conditions increased and weight gain were observed after Royal Jelly administrations [6].

► **Improves memory , Reduces risk of dementia , Alzheimer`s disease**

Alzheimer's disease is a widespread, age-related, multifactorial neurodegenerative disease that has enormous social and financial drawbacks worldwide. Preclinical findings revealed that Royal Jelly acts as a multidomain cognitive enhancer that can restore cognitive performance in aged and Alzheimer's disease people. Royal Jelly compounds such as acetylcholine, promote brain cell survival and function by targeting multiple adversities in the neuronal microenvironment such as inflammation, oxidative stress and bioenergetic challenges [7].

► **Anti-diabetic**

It has been demonstrated that Royal Jelly has antioxidant properties and can impact oxidative stress and glycemic control via insulin-like peptides and other compounds. On the basis of researches, it appears that Royal Jelly supplementation be beneficial in controlling diabetes outcomes [8].

► **Regulates blood pressure and prevents cardiovascular disease**

Royal Jelly acts on the cardio-vascular system and on the blood as a blood pressure regulator, it symptoms of menopausal and premenstrual. Studies

suggest that the 10-HDA from Royal Jelly may be responsible for the anti-hypertensive action. Also, in a study intervention with Royal Jelly for three months considerably lowered the triglyceride and low-density lipoprotein cholesterol (LDL-c) levels and thus alleviates the risk of cardiovascular disease [9].

### ► **Hematopoietic, energizing and anti-fatigue**

Dragée Royal Jelly contains B vitamins, therefore, it promotes hematopoietic and energizing. In Chinese and Japanese medicine recommend Royal Jelly in anemia (a 2-3 weeks treatment significantly improves the number and quality of the red blood cells) [10]. Dragée Royal Jelly can increase physical strength and reduce fatigue in athletes and soldiers.

### ► **Antibacterial and Antiviral Activities**

Royalisin, an antimicrobial protein, and several fatty acids from Royal Jelly, active against a large spectrum of bacteria, viruses and fungi. Thus Dragée Royal Jelly is a natural antibiotic [11].

### ► **Reduces menopausal symptoms**

Menopause is associated with physical and emotional discomfort for women and has major negative effects on their quality of life. Dragée Royal Jelly is effective in reducing the symptoms of premenstrual syndrome and also prevents bone loss in osteoporosis. These pharmacological effects of Royal Jelly are similar to those caused by the hormone estrogen [12].

► **Develops strong bones, teeth and cartilage**

Dicalcium phosphate used in Dragée Royal Jelly formula, is effective for the prevention and treatment of Phosphorus and Calcium Deficiency Diseases such as; Osteoporosis, Hypoparathyroidism, joint pain and Rheumatoid Arthritis, and is needed for keeping bones, teeth and cartilage healthy [13].



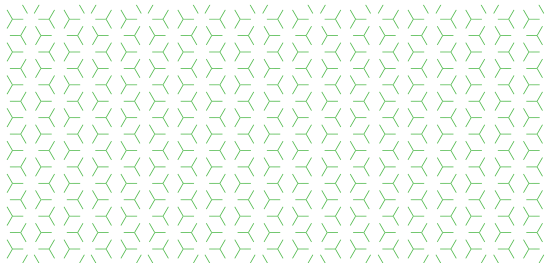
## How to use Dragée Royal Jelly?

It's recommended that you take as sucking or chewing Dragée Royal Jelly, and sublingual absorption can be more efficient overall for Royal Jelly than intestinal uptake. For adults, daily consumption of one to three dragées is recommended. It is suggested three dragées three times a day for treating infertility and improving the quality of life in certain patients

## Dragée Royal Jelly safety tips

- Taking Royal Jelly especially in the overdose, may lead to an allergic reaction. Get emergency medical help if you have any of these signs of an allergic reaction: difficult breathing; swelling of your face, lips, tongue, or throat.
- It is not recommended intake of royal jelly in the evening because it raises the energy in the body and can cause insomnia.
- It is recommended that patients with asthma or taking warfarin and antihypertensive drugs consult their physician before use.
- Do not give Royal Jelly to children under 2 years of age.
- Pregnant and lactating women should take Royal Jelly under the supervision of physician.

- This product may change color naturally.



## References / منابع

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