

ROYAL JELLY AS A SUPPLEMENT FOR YOUNG FOOTBALL PLAYERS

Abstract In direct application of scientific discoveries to good quality training process, royal jelly as a supplement is applied as a criterion of **positive change** in the phase of adaptation and exhaustion of young football players' bodies. Research carried out with 25 FC "Red Star" Belgrade football players, **12 years old**, separated in 2 groups. Experimental group (15) took the supplement daily for **two months**. The control group (10) did not use the supplement. All the examines during the two months had a regular regime of training (4 times per week) and they competed in the youngest Belgrade league.

It were observed 13 morphological characteristics in initial and final measuring. On the basis of the research results it could be concluded that football players from experimental group who used royal jelly had statistically **significant increase of body height and muscle component, and decrease of fat component** in final measurement comparing to the initial. Also, the results show statistically significant increase in circumference above knee and circumference of lower leg in experimental group on the end of the experimental treatment. The examinees from experimental group had higher average values in body height, body mass, muscle and bone component, and lower average value in fat component.

Key words: royal jelly, nutrition supplement, muscle, fat and bone component.

Introduction Physical activity is an integral part of a person's life and it is a constant battle of man and his environment which starts at his birth. The intensity of the battle grows as man matures and for every age there are specific characteristics. At a certain level of development and training a stressful reaction appears which is constant and has its **development phases: alarm phase, adaptation phase and phase of exhaustion**. The task of people employed in sports is to teach and prepare the body for creating stronger defense mechanisms for new stress agents. The question is raised how to involve a young body into a sports activity and not to disturb his biological development and, simultaneously, **to achieve top results which sport requires**. The body not involved in sports satisfies the requirements of normal mental and physical development by daily food intake. However, if the **candidate performs increased physical activity, regular and daily food intake cannot be enough for both requirements - food supplements are needed, and those are vitamins, minerals, essential amino acids and an array of other biologically active substances** whose task is to satisfy previously mentioned requirements.

Nowadays market offers thousands of remedies which are supposed to help young athletes. Their content and quality vary, from common water to hormonal remedies which can **sometimes do greater damage to the body than good**. One of those **remedies is royal jelly which has positive effect on the body of an athlete and can be used for medical purposes and in medicine it is used from pediatrics to**

geriatrics. The structure of royal jelly can be used in many body states which we call nonphysiological: **improvement of heart function, strengthening of immune system, improvement of mental state and mood, strengthening and increase of body resistance, regulation of adrenal gland function under stress, depression relief, fatigue, neurosis, insomnia and the likes**, stimulation of functioning of gland with internal secretion, regulation of functioning of all organs and tissues, improvement of convalescents recovery etc.

Numerous scientific analysis (Ardry, 1956; Howe et al., 1985; Otani et al., 1985; Takenaka, 1984 and 1987; Schmitzova et al. 1998) show that **royal jelly contains all of these substances** for which we lobby and which should be taken in any form; they resorb rapidly and are taken to basic units – cells by transport mechanism. Joksimović, A. et al.: Royal jelly as a supplement for young football players Sport Science, 2 (2009) 1: 62-67 63 At that level bioactive actions take place. Some research (Johansson & Johansson 1958; Bonomi 1983; Prosperi & Ragazzini 1956; Destrem 1956) followed the effects of use of royal jelly on a sample of adults over a certain period.

The following was determined: **improvement of heart function and blood vessels, better excitation of nervous system, faster relief of fatigue, shortening of recovery time and other parameters which are significant for achieving results in football.** Johansson's research shows that royal jelly has positive effect on intestinal flora and this antimicrobial activity can be explained by PH value activity. The effect of some components on endocrinal glands or their intake and entering the enzyme system which affects the metabolism was investigated by Bonomi in 1983 emphasizing the positive effect. Prosperi and Ragazzini (1956) argue that royal jelly affects the basic state, **increases body mass**, erythrocytes, hemoglobin (80-100 mg daily). According to Destrem in

- ✓ **1956 royal jelly achieves good effects when 20 mg is injected every day or every other day.**

Takohashi et al. (1983) point out the appearance of allergic contact dermatitis caused by royal jelly in patients which are sensitive to it. Ardry (1956) thinks that royal jelly influences the body by stimulating the gland with internal secretion, **especially the adrenal gland.** The subject of research is royal jelly as the supplement in the preparation period with **young football players, seventh and eighth grade primary school students and their morphological characteristics.**